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REMOTE STORAGE JITTERS

Outsourcing can be attractive, but some companies are nervous about storing their mission-critical data so far away from home. Page 72

BEST OF EXECUTIVE ED

Check out our first survey of leading programs, covering trends, costs and CIO recommendations. Page 46

COMPUTERWORLD

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SEPTEMBER 18, 2000 ▪ VOL. 34 ▪ NO. 38 ▪ $5 COPY

RSA ENCRYPTION PATENT RELEASED

Algorithm can now be used free of charge

BY ANN HARRISON
SAN FRANCISCO

RSA Security Inc. pre-empted a number of celebration parties by unexpectedly releasing the widely used RSA public-key encryption algorithm into the public domain ahead of this week's expiration of the patent on the algorithm.

The move, like the patent expiration, will allow security vendors and others to use the algorithm at no charge, without a license from RSA Security. Analysts said this will result in more secure applications, especially among smaller firms that couldn't afford the fees.

In fact, one of RSA's biggest competitors, Baltimore Technologies PLC in Dublin, said it will now give away a repackaged version of its developer

Encryption, page 16

Patented No More

The RSA algorithm, newly released into the public domain, is used:

- In the leading Web browsers for implementing security with **Secure Sockets Layer** encryption
- In mail clients for **signing and encrypting e-mails**
- In payment systems and **virtual private networks**
- For digital **signatures** and digital **certificates**

POLICING PRIVACY GOES HIGH-PROFILE

Expedia vows no data sharing without consent

BY MICHAEL MEEHAN

Online travel-service provider Expedia Inc. has grown significantly this year through the absorption of smaller Web sites and has raised its profile by developing a new airfare search engine. But the company today is unveiling a new privacy policy it said will have just as dramatic an effect on its bottom line.

Aiming to stave off government intervention, the Bellevue, Wash.-based spin-off of

Expedia, page 93

CUSTOMER PRIVACY

Chief privacy officers enter executive suite

BY PATRICK THIBODEAU
WASHINGTON

Ronald Hoffman, the privacy issues manager at Mutual of Omaha Insurance Co., is at the forefront of a new breed of company officials who are working with CIOs to set corporate data-privacy policies.

Hoffman is responsible for helping to establish privacy practices at the Omaha-based insurer. It's part of an overall corporate strategy in response to new privacy regulations and

CPOs, page 93

USERS PERTURBED BY ORACLE PRICES

New capacity-based model for 8i database can be costlier; company stands its ground

BY DOMINIQUE DECKMYN AND JAIKUMAR VIJAYAN

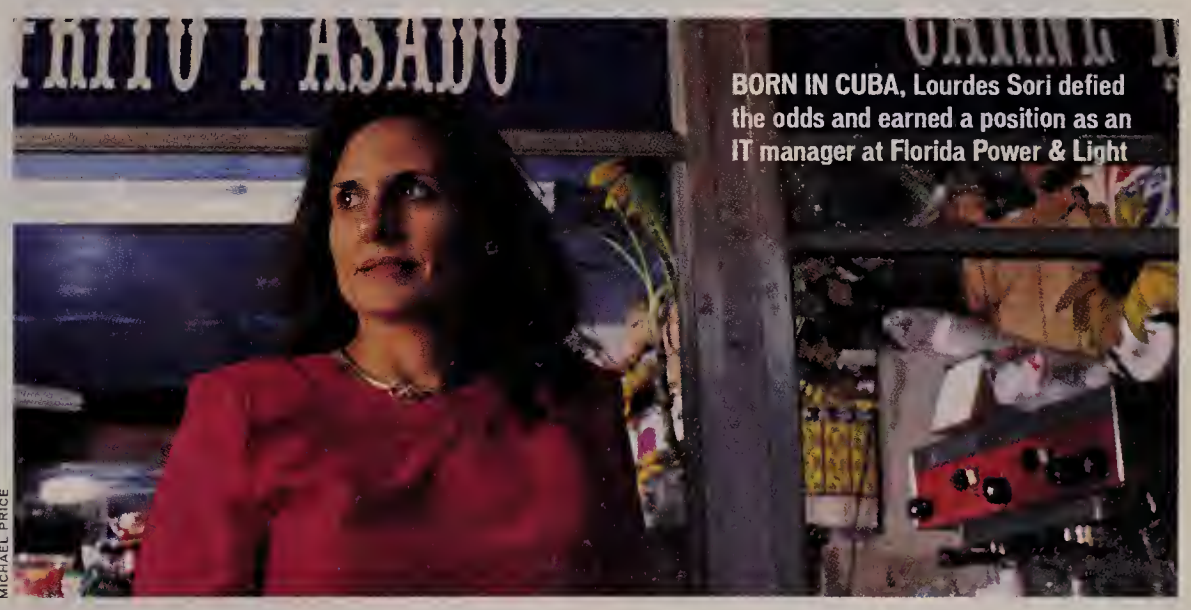
A new pricing scheme that Oracle Corp. hoped would make its database pricing simpler and more predictable is costing some customers more money and causing at least a few to look to competitors such as IBM and Microsoft Corp.

In interviews with *Computerworld*, more than a half-dozen users and potential users of the Oracle8i database complained about the capacity-based pricing, which was announced last year and went into effect across the board in the last quarter.

"Their licensing recently has been extortionist," said Jim Prevo, vice president and CIO at Green Mountain Coffee Roasters Inc. in Waterbury, Vt., a few weeks after reaching a licensing deal for a hefty Internet server.

Oracle's 8i pricing is based on a measure it calls the universal power unit. The UPU is calculated by multiplying the number of processors by the processor speed. That number is then multiplied by the price

Oracle, page 14



BORN IN CUBA, Lourdes Sori defied the odds and earned a position as an IT manager at Florida Power & Light

MICHAEL PRICE

HELP WANTED: LATINOS

HISPANICS ARE THE FASTEST-GROWING SEGMENT OF THE U.S. population, but you'd never know that by their underrepresentation in the IT workforce. Yet tapping this labor pool could go a long way toward reducing the IT worker shortage — without going offshore. Mark Hall reports that the solution involves targeted recruitment of Latino college students and mentoring programs on the job.

Story begins on page 52.

NEWSPAPER

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It couldn't have come at a better time. With eBusiness storage needs typically doubling every 18 months, and the growing demand for 100% uptime and availability of servers, IT administrators are facing ever-greater challenges.

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MARC BERLOW

ORDER ON THE DESKTOPS

Desktop management suites are becoming easier to integrate into existing systems, but interoperability and support for mobile users are still lacking. Page 68

STEVE WIDOFF

LOOSENING THE BELT

Talbots dresses for success, making a record investment in IT as it looks to future profits. Page 42

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6 AUTO EXCHANGE passes an FTC investigation into antitrust concerns but faces integration and organizational problems.

8 BANKS LAUNCH a joint financial information site for major customers.

8 MONSTER.COM STARTS a recruiting service for execs earning $150k and more.

10 PRIVACY ADVOCATES criticize Microsoft for "persistence" features in its browser; the company promises privacy enhancements.

12 VIRGIN DEBUTS branded cellular service, leasing capacity in the U.S. to link with wireless nets in the U.K., Singapore.

14 NORDSTROM CIO FALLS victim to exec purge as retailer tries to re-energize business and advance replenishment and inventory management systems.

16 HUMAN ERROR OPENS the door to a cracker at Western Union's site, 16,000 credit-card numbers are threatened and the site gets refortified.

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WORKSTYLES

44 ESPN.COM IS the ultimate job destination for armchair quarterbacks worldwide, but it's not all fun and games.

52 LATINOS ARE underrepresented in information technology despite the growing number of them in the U.S. and the demand for IT workers.

54 CIOs MOVE into the spotlight as IT gains clout. Prudential's CIO, William D. Friel, offers tips on dealing with the media.

QUICKSTUDY

56 ONLINE PROFILING raises controversy over the balance between gaining valuable data about customers and invasion of privacy.

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60 SUN RELEASES its latest microprocessor, the UltraSPARC IIe, designed for storage systems and other high-end applications.

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64 DIGITAL WALLETS provide 6GB of plug-and-play external storage that also reads compact flash cards from digital cameras and MP3 players.

72 STORAGE OPTIONS abound, but many top companies are reluctant to give up control of their key data.

QUICKSTUDY

74 AN EASTER EGG is a graphic or sound effect produced by a program that's meant either as a joke or to display program credits. Find out more in this week's primer.

ONLINE

E-Commerce Community columnist **Jim Sterne** explains what Amazon.com's new privacy policy really means. *www.computerworld.com/ecommerce*

On our new **Sun Spotlight** page, follow the latest news about the external memory cache problems affecting some Sun Ultra Enterprise Unix servers, and view comments from other readers about the problems and the company's efforts to keep dissatisfied customers quiet. *www.computerworld.com/sun*

Also in our **E-Commerce Community,** Peter Swire, the Clinton administration's chief counselor for privacy, rebuts criticism leveled against federal government Web sites by congressmen Dick Armey (R-Texas) and W. J. "Billy" Tauzin (R-La.). *www.computerworld.com/ecommerce*

OPINIONS

32 MARK HALL says investing in the right kind of IT system a few years ago could have helped Ford and Bridgestone/Firestone avoid their tire problems.

32 DON TAPSCOTT says IT organizations should forget about the skeptics and embrace the Wireless Application Protocol.

33 JOHN GANTZ asks: Is your company making plans to capture more online business from Europe?

34 ALEX TORRALBAS says operating system developers should take the lead in security against viruses and worms.

34 WILLIAM M. ULRICH writes that if you're shopping for an ASP, consider forming one with the help of the competitors in your industry.

44 ED YOURDON says IT organizations involved in electronic-business projects need to investigate "light" project management methodologies.

94 FRANK HAYES says Western Union learned from experience that when crackers attack, the best-laid recovery plans depend on what business partners want.

AT DEADLINE

SAS Shuffles Execs in Preparation for IPO

SAS Institute Inc. in Cary, N.C., said Andre Boisvert has been named president and chief operating officer of the company and its founder and original president, James Goodnight, will remain as CEO. SAS said the move was made so Boisvert can handle the day-to-day operations of the company and prepare it for an eventual initial public offering.

Marriott Signs ASP

Marriott International Inc. in Washington has signed up with Cephren Inc. in Palo Alto, Calif., to use the application service provider's hosted project collaboration software in its architecture and construction division. Marriott said Cephren's software should help reduce the duration of up to 1,800 projects each year.

Short Takes

Fifteen firms announced that they will form a coalition to design e-mail standards to limit spam. Included in the Responsible Electronic Communication Alliance are DOUBLECLICK INC. and 24/7 MEDIA INC., both based in New York. . . . Troy, Mich.-based KMART CORP. has named Randy L. Allen, a partner at San Francisco-based DELOITTE CONSULTING, CIO and executive vice president of strategic planning. She replaces Joseph Osbourn, the retailer's third CIO in the past five years.

Corrections

In the Hack of the Month column by Deborah Radcliff in the Sept. 11 issue, references to the small hard drive in Palm devices should have been to the devices' RAM.

In "Authorization Management Tools Emerge" [Technology, Sept. 11], the labels on the diagrams were inadvertently switched. Each diagram was correctly identified in the captions, some of which started with the right company and product name. The correct order, from left to right, is Entrust Technology and Securant.

Porsche Fixes Satellite Net Latency Problem

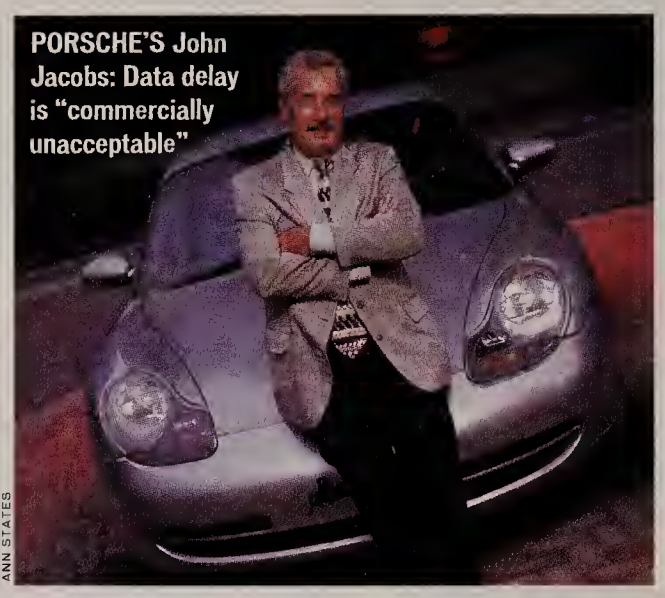
Acceleration software cuts lag time to 3.5 sec.

BY JAMES COPE

WHEN A user at a Porsche car dealership hits a computer key to check on parts availability, he has to wait a good 10 seconds for anything to happen. That isn't the sort of speed record Porsche's 200 dealerships in North America want to achieve.

The problem is latency associated with Porsche Cars North America Inc.'s satellite network system, and the Atlanta-based company has been tinkering under the hood to fine-tune it. Last week, Porsche confirmed that it has found a fix: Web front-end and network-acceleration software.

The signal from the user's keystroke currently travels from the dealership's satellite dish to a satellite 22,000 miles above and then back down to the Porsche satellite hub in Detroit, where it's transmitted over a terrestrial cable to the automobile company's data center in New Jersey.



PORSCHE'S John Jacobs: Data delay is "commercially unacceptable"

ANN STATES

By the time the information gets back to the dealership, it has traveled 90,000 miles, said John Jacobs, manager of dealer and field systems at Porsche.

The resulting delay of 10 to 12 seconds "is commercially unacceptable," Jacobs said.

Looking Forward

Ted Larson, a parts assistant at Napleton Porsche in Westmont, Ill., said he has experienced delays and is eager for Porsche to roll out the system in the next several weeks.

Besides moving away from a green screen to a Weblike interface, Jacobs said, the implementation will cut network latency by two-thirds, reducing response time via the satellite link to 3.5 seconds. Porsche is using network-acceleration software called Venturi from Fourelle Systems Inc. in Santa Clara, Calif., to help speed response times.

Venturi has both server and client components. In Porsche's case, the client runs on dealerships' PCs and the server software runs on a dedicated dual-Pentium PC housed at the company's data center. The Web-hosting and acceleration servers connect to an IBM AS/400 back end, which is also located at the data center.

In addition to caching and compressing data to help minimize latency, Jacobs said, Venturi spoofs, or fools, the satellite network link into thinking it's streaming the data instead of sending it in packets. Ordinarily, the client PC would intermittently acknowledge to the server that individual data packets making up files have been received. Porsche's implementation doesn't acknowledge receipt until all the requested data has been received, he said.

Jacobs said the Venturi implementation will cost Porsche slightly less than $100,000.

Decreasing latency over satellite links and other wireless links is an ongoing challenge, said Roberta Wiggins, an analyst at The Yankee Group in Boston. Users expect the same fast service they get on their wired networks, she noted. ◗

HP Server Offers Varied Pricing, Support

Analysts say new model may help firm close in on Sun's lead

BY JAIKUMAR VIJAYAN

Hewlett-Packard Co.'s new Superdome high-end Unix server, announced last week, is aiming to be different from competing machines, not just on the technology front but also in the way it's priced and supported, according to users and analysts.

The 64-processor Superdome system is scheduled to ship in the first quarter next year. The product is targeting the database server, application hosting and server consolidation markets.

The technologies included in Superdome (see chart) make the server ideal for tasks like application consolidation, said Tim Lindler, vice president of information technology operations at First Union Corp. in Charlotte, N.C.

"As a corporation, we are looking for ways to reduce IT costs," Lindler said. Instead of buying new servers for every new application, the bank will be able to consolidate them into a single, large Superdome server going forward, he said.

Key Differentiators

Superdome's scalability and hot-swappable components also make it a reliable server for large applications, said Bill Mansfield, a director at Telcordia Technologies Inc. a a Piscataway, N.J.-based provider of software for telecommunications companies.

"Telecommunications is an always-on industry," Mansfield said. "The computing environment that supports it has to [meet] very high requirements" when it comes to system availability, he said.

But what will really set Superdome apart from its rivals is how HP said it plans to sell and support the system: with individual managers for each customer, said Rich Partridge, an analyst at D. H. Brown Associates Inc. in Port Chester, N.Y.

HP will also offer a utility-like pricing model under which users pay for the system based on their actual usage of the box.

Instead of paying for the entire system up front, users will be able to install a fully configured server and turn resources on and off as needed.

A similar but separate program will allow users to buy fully configured Superdome servers but pay only for the processors and associated software that are actually being used. Customers can activate additional processors when needed and pay for only that amount of time.

The product should help HP close in on Sun Microsystems Inc.'s lead in the high-end Unix server space, said Jean Bozman, an analyst at International Data Corp. in Mountain View, Calif. Other products, such as Sun's Ultra Enterprise 10000 servers and IBM's S80 boxes, offer similar features, said Mansfield. ◗

JUST THE FACTS

Superdome Unix Server

- Support for up to **64 PA-8600 processors** with **1.5MB on-chip cache** per chip
- Up to **128GB of memory**
- Hardware and software partitioning capability with **failure isolation**
- Future support for Intel's **IA-64** chips and for multiple operating systems, including HP-UX 11i, Windows NT and Linux
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Big Three Clear Major Hurdle With FTC

Analysts say regulatory inquiries and integration strategies remain an issue

BY LEE COPELAND

AFTER TWO rounds of inquiries by the U.S. Federal Trade Commission (FTC), the Big Three's online auto industry exchange last week won tentative approval to open its virtual doors. Gaining that green light will allow the Southfield, Mich., exchange, called Covisint, to seek a permanent location, hire a CEO and gear up to launch by year's end.

However, analysts noted, the start-up must still tackle infrastructure integration issues with participating suppliers and additional regulatory concerns abroad.

The FTC's investigation focused on antitrust concerns and the underlying technology infrastructure that Covisint plans to implement. The probe is being closed for now, but the commission noted that it could reopen the matter in the future.

FTC Chairman Robert Pitofsky said in a statement that Covisint is in such an early stage of development that FTC members "cannot say [the] venture will not cause competitive concerns." If it appears to do so, the FTC will reopen the case.

General Motors Corp., Ford Motor Co. and DaimlerChrysler AG have invested $200 million in Covisint since its launch in February. Renault SA and Nissan Motor Co. have signed on to join the exchange as nonowner participants. Together, the five automakers could potentially process up to $300 billion in annual purchases of items such as office supplies and engine parts through Covisint.

Dan Garretson, an analyst at Forrester Research Inc. in Cambridge, Mass., said the FTC's approval should eliminate mounting concerns that online industry exchanges aimed at trimming procurement transaction costs are anticompetitive.

"This was the first and biggest exchange to get FTC approval," said Garretson. "But the FTC found that Covisint was about efficiency and not about collusion."

Covisint still needs to devise an interim plan to assist suppliers as they transition from electronic data interchange (EDI) to Internet-based systems, Garretson said.

According to a recent Forrester survey of 30 large automotive suppliers, 74% of their sales were conducted using EDI, 25% of sales were handled by other means such as by phone and less than 1% used Internet technologies. By 2004, those suppliers anticipate shifting to 68% of sales conducted over the Internet, 21% using EDI systems and the remaining 11% handled off-line.

AT A GLANCE

Covisint's Road Map

The Big Three's direction:

- Gain approval from Bundeskartellamt, the German Federal Cartel Office, which has launched an investigation into Covisint
- Court major automakers such as Toyota Motor Co. and additional top-tier suppliers
- Develop a migration path for suppliers with EDI-based systems

In a separate development, Dearborn, Mich.-based Visteon Corp. last week announced that it plans to participate in the Covisint exchange. Visteon is the world's second-largest automotive supplier, with a revenue of $19.4 billion last year. ◗

FTC Member: Panel Still Learning About Online Exchanges

Says B2Bs cover familiar ground for brick-and-mortars

BY CAROL SLIWA
ASPEN, COLO.

U.S. Federal Trade Commission (FTC) member **Mozelle W. Thompson** spoke earlier this month at the Net Returns conference organized here by *The Industry Standard*, one of *Computerworld*'s sister publications. Following his speech, he spoke with *Computerworld* about the issues raised by online business-to-business marketplaces and the FTC's approach to monitoring them.

Q: What are some of the issues the FTC is interested in with regard to online business-to-business marketplaces?

A: We're learning more about the B2B exchanges. I think what's kind of interesting . . . is that [the] term covers a lot of things, a lot of which is not new at all. We've been involved with [regulating business-to-business relationships] for a long time, and we have some rules about how businesses should conduct themselves to avoid antitrust problems, including avoiding opportunities for collusion and price fixing and joint purchases that have a negative market effect. What we're doing now is spending time with the folks who are involved in B2B exchanges to understand a little bit about what they're doing, but also to remind them and to get them to think a little bit more about some of those areas I just talked about.

FTC'S Mozelle Thompson: Online isn't the Wild West

Q: In June, the FTC held a two-day workshop on business-to-business exchanges. What did you take away from that event?

A: I think they were among the most popular workshops we've ever had. There were 500 people [in attendance]. I also think that we learned a lot, and [the attendees] learned a lot. I expected to hear a lot more of the normal, hard-core tech responses: "Government should stay away. It shouldn't be involved." [But] I think that there are a lot of folks who actually see some real value to government involvement in two ways: One is to legitimize the fact that some of these B2B marketplaces can provide real value, and second is to give them some guidance as to how to avoid problems.

Q: The FTC is now investigating marketplaces promoted by the automotive and airline industries. Can you comment on some of the broad issues involved in those two cases?

A: I don't think I really can. But the one thing that I would tell people is that there are some very highly visible and large B2B exchanges that are sort of on the radar screen right now. . . . We have found that this is not a one-size-fits-all proposition. So I would be very careful [about thinking] that whatever happens on any given [investigation], especially early on, is indicative of how we're going to view everything in the B2B space.

Q: Is there any message you'd like to send to information technology staffers whose companies are jumping into online marketplaces or thinking about it?

A: I think they need to get good advice. One thing that I tell people is that in the online space, there's always a fair amount of hype involved. [They should] begin to get away from the hype and . . . try to figure out what the real value proposition is to them of getting involved in a given marketplace or an exchange.

What I would also say — and maybe this is especially important for companies [that] are moving from bricks to clicks [and] have maybe a little bit longer track record — is that it's not the Wild West out there. Just because it's online doesn't mean that it's that much different. ◗

NSF Awards $90M in Grants

BY JENNIFER DISABATINO

The National Science Foundation (NSF) last week announced $90 million in information technology grants, intended to develop projects ranging from personal robotic assistants to a program that will automatically repair corrupt data.

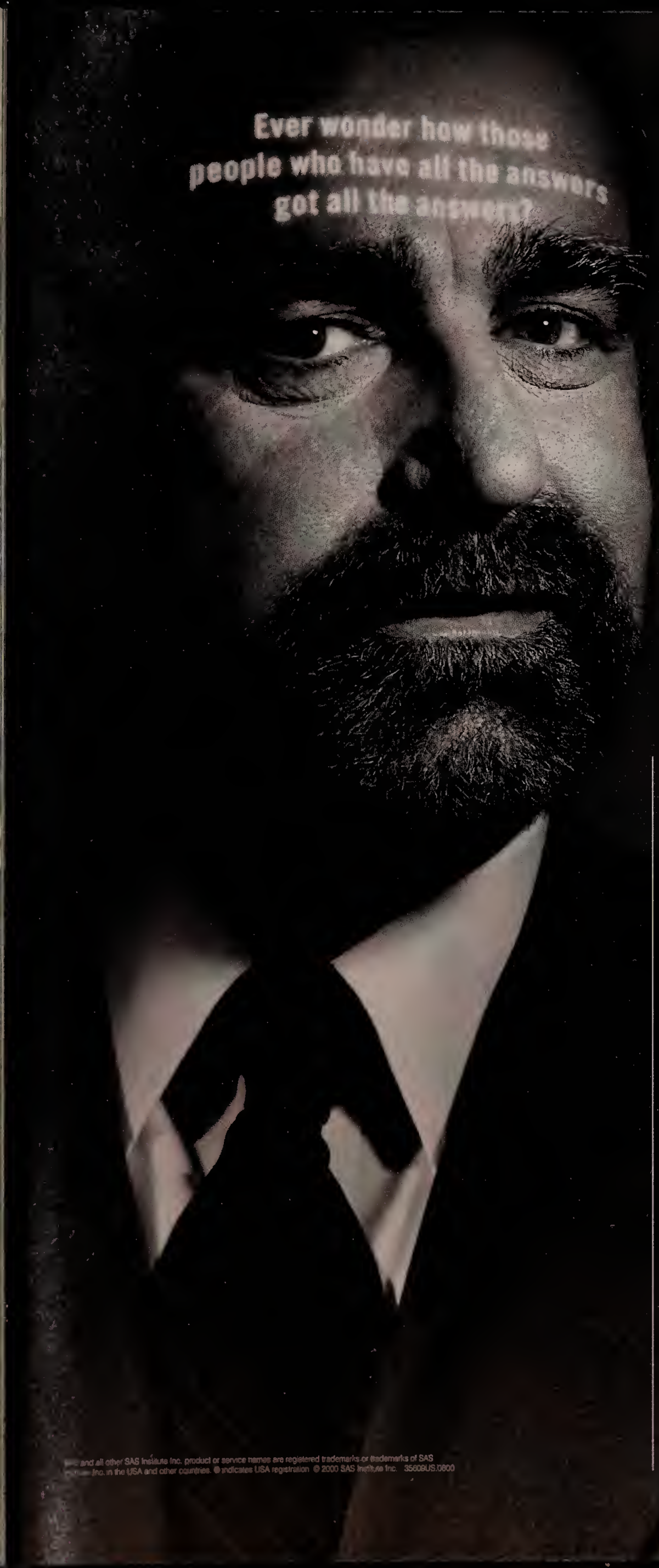
The grant money, appropriated by Congress for the Arlington, Va.-based foundation's new Information Technology Research program, will fund studies at universities and privately funded consortiums to keep the U.S competitive in the New Economy, help more people become proficient in IT and develop assistive technology such as personal robots to assist the elderly and physically disabled, the foundation said.

One of the largest awards is a $7.2 million grant for Duke University in Durham, N.C., to study bioinformatics. Duke will use IT to study how protein structure determines the structure of an enzyme.

One initiative at the California Institute of Technology in Pasadena will establish an Institute for Quantum Information to study the algorithms that process data by quantum physical processes. Caltech's program, if successful, would eventually make even the fastest silicon chip obsolete.

The University of California at Berkeley and Mills College in Oakland, Calif., will use the funds to collaborate and develop a prototype of error-sensing software that would automatically repair data.

The grants total $230 million, but much of that is for multiyear grants. The $90 million will cover the costs for this year. The NSF is asking Congress for $190 million for more grants next year. ◗



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BRIEFS

Southwest Hits $1B Mark in Online Sales

Dallas-based Southwest Airlines Inc. has announced that its Web site generated more than $1 billion in passenger revenue from January to August. About 30% of Southwest's ticket sales come directly via the Internet, the airline added.

Southwest has been taking reservations on its Web site since early 1996 and led all airlines last year with $877 million in online sales, according to online travel research firm PhoCusWright Inc. in Sherman, Conn. That was more than $200 million ahead of second-place Delta Air Lines Inc.

FTC Postpones Decision on Internet

The Federal Communications Commission (FCC) last week postponed its formal opening of an inquiry into federal regulations governing high-speed Internet access over cable systems. Commissioner Gloria Tristani requested the delay because of the potential impact on the FCC's review of the merger between Dulles, Va.-based America Online Inc. and New York-based Time Warner Inc. The FCC will take up the inquiry again by month's end.

Oracle Doubles Profits

Oracle Corp. posted record results for its first quarter of 2001, reporting $501 million in profits, compared with $237 million for the same period last year. Sales totaled $2.3 billion, up from $2 billion for the same period a year ago. The company will also issue a two-for-one stock split effective Oct. 13.

Poll Exposes Online Shopping Fears

In a poll of 800 consumers concerning their attitudes toward e-commerce, 51% said the main reason they haven't shopped online is fear that their credit-card information might be stolen, while 26% said they like to see and touch the things they are buying. Ten percent said they were worried that information about their purchases and habits would be sold or shared.

Top Banks Launch Joint Site for Corporate Clients

TheMarkets.com will debut later this year

BY MARIA TROMBLY

SEVEN OF the world's leading investment banks last week announced plans to launch a joint financial information Web site for their institutional clients.

The site, TheMarkets.com, is expected to make it easier for corporate customers such as Wal-Mart Stores Inc. to find equity research, market data and other investment information in one place. But customers won't be able to use the site to buy or sell stocks online, at least not initially, which may hinder customer adoption, analysts warned.

Big institutional investors, which typically have accounts with multiple investment banks, have grumbled about how they have had to jump around among different bank Web sites to locate and gather market information, said Don Callahan, a managing director at New York-based Morgan Stanley Dean Witter & Co., one of the banks in the venture.

Using TheMarkets.com, customers should be able to get at this information more easily by going to a single, consolidated location, he added. The effort is akin to the kind of aggregation portal Citibank recently launched — MyCiti.com — that allows retail customers to view all their accounts from a variety of U.S. financial institutions (see story, page 40).

But unlike the MyCiti.com site, which is available to Citibank and non-Citibank customers alike, TheMarkets.com will be available only to institutional clients of the participating banks, such as pension funds, asset managers and hedge funds.

Multex.com Inc. in New York will provide the infrastructure for the site, which will link investors to Morgan Stanley Dean Witter, Goldman Sachs Group Inc., Merrill Lynch & Co., Salomon Smith Barney Holdings Inc., Credit Suisse First Boston, Deutsche Banc Alex. Brown Inc. and UBS Warburg. The site is scheduled to launch in the fourth quarter.

Still, the inability to trade on the site could deter customers from using it, said Dana Stiffler, an analyst at Newton, Mass.-based Meridien Research Inc. "Until there's some kind of transactional capability, it's basically like putting a catalog online," she said.

Eventually, information-only sites and trading sites will converge, because it's logical for them to be linked and because customers will demand it, said Larry Tabb, an analyst at Needham, Mass.-based TowerGroup.

According to executives at the participating investment banks, there will be no additional costs for clients to use the service. Callahan said the group is talking with other investment banks about joining the venture in the future.

Uniting Institutions

TheMarkets.com promises to be a one-stop shop for market info:

- Single-user sign-on
- Comprehensive personalization tools
- Commingled institutional equity research
- Calendar of basic equity and new-issues information
- Summary views of TheMarkets.com participating banks' most recent ratings and headlines
- Click-through access to more detailed information on a participating bank's Web site
- Third-party news and market data
- Access to collaborative forums
- Access to multimedia presentations

Job Web Sites Target Execs

BY JULEKHA DASH

In just a week's time, Monster.com's new Web site that targets senior executives has drawn more than 2,000 job candidates and several hundred postings.

ChiefMonster.com, a site tailored specifically for job seekers who earn at least $150,000 annually and have a vice president's title or higher, was created because Monster's research indicated that senior executives wanted more information online about job opportunities, according to Linda Natansohn, a Monster.com senior vice president.

But while the popularity of job hunting on the Internet has led to a profusion of job boards, many labor industry leaders are skeptical about whether companies will turn to the Internet to hire high-level employees.

More than two-thirds of 4,000 executives surveyed in April said their companies post job openings on the Internet. But about the same percentage said they wouldn't put their own résumés online or had reservations about doing so, according to the survey by BrilliantPeople.com, the online recruiting site of Cleveland-based Management Recruiters International Inc.

Jim Jones, managing director of The Information Management Forum, an Atlanta-based association of business and information technology executives, said Internet job hunting poses too much risk of exposure for senior workers, who typically don't like to advertise that they are job hunting.

Although Monster said candidates' identities aren't revealed on ChiefMonster — job seekers decide which openings they want to pursue — Jones said that in tight hiring circles, some managers may nonetheless be able to identify job candidates, particularly if they post on multiple boards.

Some clients, such as Maggie Yunker, human resources manager at professional services firm Gobosh in San Jose, said they feel that they need a recruiter to sell the company to the candidate. Yunker said it's easier to make a package look attractive by using a live person rather than the Internet.

The "best candidates aren't surfing the Internet looking for job openings," says Tammy Anderson, managing partner at Atlanta-based Lysen Anderson Executive Search Inc. Passive job seekers don't carry a lot of "baggage" and can view a job opportunity more objectively because they're not looking to leave their present situations, she added.

Headhunter.com

Sites that target top executives:

Monster.com, ChiefMonster.com
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Korn/Ferry, e-Korn/Ferry
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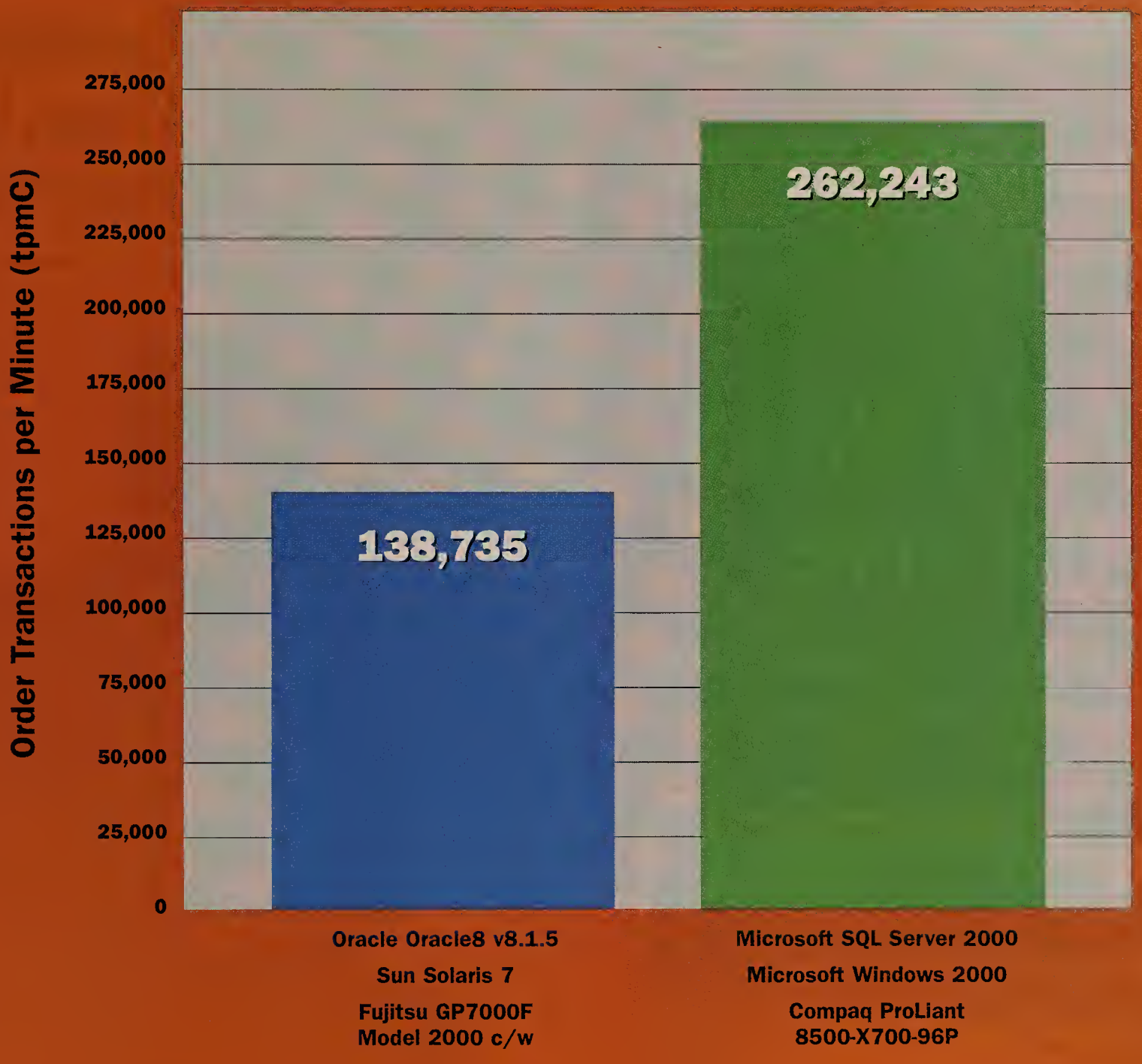

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Microsoft Mulls Browser Changes on Privacy Front

BY ANN HARRISON

Microsoft Corp. last week said it's looking at altering the next version of its Internet Explorer browser to allow users to more easily disable the software's "persistence" feature, which lets Web sites gather some information about Internet usage and identify return visitors even if they have turned off Explorer's ability to accept Internet cookies.

Rick Miller, a Microsoft spokesman, said the feature was designed to let more information be stored at the user level so Web pages can be downloaded more quickly, especially on slower dial-up connections.

But he acknowledged that users who have already disabled Explorer's cookie capabilities may be uneasy about the information gathered by the browser via persistence, such as search queries users have run and Web pages they have visited.

To disable persistence now, Explorer users have to turn off the browser's scripting features. But Miller said Microsoft is considering a plan to include a feature in Internet Explorer 6.0, the next scheduled release of the browser, that would let users clear the cache of Web files in which information gathered via persistence is stored.

Richard Smith, chief technology officer at the Denver-based Privacy Foundation, noted that the persistence feature was introduced in Internet Explorer 5.0, which is now used by half the people who surf the Web.

Microsoft this summer developed a set of cookie management features for Internet Explorer 5.5 that can be downloaded from its Web site. Those features include a button that gives users the ability to delete all cookies and a pop-up box that notifies them when third-party cookies arrive on their systems.

Privacy concerns about the persistence feature in Explorer were first raised by Guille Bisho, a Spanish information technology consultant, in a posting sent last week to the Bugtraq security mailing list. Bisho said Microsoft should provide more information about persistence to users and place an option to deactivate the feature near its browser's cookie controls.

Complying With Privacy Law Too Pricey for Kid Site

BY LINDA ROSENCRANCE

The cost of complying with the federal Children's Online Privacy Protection Act (COPPA) and a lack of advertising dollars is forcing Zeeks.com Inc., a children's Web site in Portland, Ore., to shut down its chat rooms and e-mail service by the end of this month.

The law, which went into effect in April, requires Web sites that get traffic from children who are under 13 to post a privacy policy detailing the personally identifiable information they collect from young visitors. That includes information required to register as a user of a site or data that children may reveal in chat rooms or on posting services.

Zeeks.com CEO Steven Bryan said the company is planning to add more online games to recapture the traffic — 20% of the site's overall visitors — that will be lost by shutting down the e-mail and chat services.

But Bryan, who said complying with COPPA would cost his company about $200,000 per year, made it clear that the expenditure needed to do that wasn't the only reason for discontinuing the interactive features of the site. He said a lack of advertising dollars also contributed to Zeeks.com's decision.

Group Decries Use of 'Web Bugs'

Cites lack of user control

BY TODD R. WEISS

Companies and online advertisers that use information-gathering "Web bugs" on their Web sites should clearly disclose the presence of the technology to users, according to a Denver-based privacy group that proposed a set of standards to address the issue last week.

The proposal was detailed at the Global Privacy Summit in Washington by the Privacy Foundation, which claimed that many Web sites are using Web bugs to track the activities of visitors without their knowledge. Users "don't have much control over" Web bugs, said Stephen Keating, the foundation's executive director.

Web bugs are similar to the Internet cookies that are widely used to track the online movements of Web users and store information about them, but the bugs are invisible to users. Cookies can be turned off or controlled through a Web browser, but Keating said there are no such management features for Web bugs because they're embedded within the HTML code on a Web page. That means they "can be much more insidious," he added.

The Privacy Foundation's proposal calls for standards under which Web bugs would be clearly shown as visible icons on a computer screen, rather than as small, dot-size images that are nearly impossible to see. The group also supports a requirement that the icons be clearly labeled with the names of the companies that have placed the Web bugs on a site.

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BRIEFS

Banks to Release Visa Smart Cards

The U.S. has been lagging behind Europe when it comes to the adoption of smart-card technology, with New York-based American Express Co.'s Blue the only credit card with an embedded chip on the market. That's about to change, as three banks – Providian Financial Corp. in San Francisco, FleetBoston Financial Corp. in Boston and First USA Bank N.A. in Wilmington, Del. – have announced that they will soon be releasing Visa smart cards. According to bank officials, these cards will provide greater security for online shoppers, reduce costs for Web merchants and allow for other services such as electronic ticketing.

Struggling SCO Gets $13.1M Cash Infusion

The Santa Cruz Operation Inc. (SCO), which has been buffeted by two straight quarters of losses and recently announced a 19% workforce reduction, last week said it has received a cash infusion of $13.1 million. The Santa Cruz, Calif.-based software vendor said the financing is coming via a private placement facilitated by Security Research Associates Inc., a brokerage in Larkspur, Calif., that plans to sell 3.3 million shares of SCO's stock to its clients.

Short Takes

APPLE COMPUTER INC. last week released the public beta-test version of Mac OS X. It's available online for $29.95. . . . PCSUPPORT.COM INC. in Mountain View, Calif., said it will acquire MYHELPDESK.COM INC. in Norwood, Mass., for 1.5 million shares of common stock. . . . Digital media software companies LOUDEYE TECHNOLOGIES INC. in Seattle and FIREPAD INC. in Mountain View said they are working on technology to deliver streaming video and animation to Santa Clara, Calif.-based PALM INC.'s handheld devices. . . . WORLDCOM INC. will appeal a ruling by the EUROPEAN COMMISSION that blocked its $115 billion acquisition of SPRINT CORP. . . . Linux systems vendor RED HAT INC. in Durham, N.C., announced strong second-quarter results, with revenue up 76% to $18.5 million.

StarBand to Offer Satellite Broadband

Gilat, Microsoft, EchoStar invest in satellite access Internet company

BY JAMES COPE

A NEWLY FORMED venture backed by Microsoft Corp. has set the stage for the rollout early next year of a satellite-based broadband Internet-access system for business users.

StarBand Communications Inc. in McLean, Va., last week announced an early implementation of the system: It is providing the Navajo, Hopi and Havasupai Indian reservations in Arizona, Utah and New Mexico with satellite links to Northern Arizona University's distance-learning programs in Flagstaff, Ariz.

StarBand was formed last week by Microsoft, Gilat Satellite Networks Ltd. in Petah Tikva, Israel, and EchoStar Communications Corp. in Littleton, Colo.

Gilat's vice president of investment relations, Dianne VanBeber, said the consumer version of the broadband satellite Internet system will be available next month, while a more robust version for businesses will be rolled out in the first quarter by McLean-based Spacenet Inc., a wholly owned subsidiary of Gilat.

The satellite system has also been tested by Caterpillar Inc. in Peoria, Ill. Gus Otto, a systems architect at Caterpillar, said the equipment used for the consumer and business versions of the system is fundamentally the same. If tests pan out, Otto said, he believes the two-way satellite system could provide videoconferencing from remote sites around the world.

PACK MULES help bring StarBand's two-way satellite-enabled system to the Havasupai Indian reservation

Consumer Version Coming

The consumer version will be marketed through Fort Worth, Texas-based Radio-Shack Corp.'s retail outlets in conjunction with Microsoft and Compaq Computer Corp. It will also be sold through dealers of the Dish Network, the TV satellite service owned and operated by EchoStar.

The system will have a downstream speed of as much as 500K bit/sec. and an upstream speed of 153K bit/sec. Because it's a two-way satellite system, it won't require a phone line, VanBeber said.

Roberta Wiggins, a director and an analyst at The Yankee Group in Boston, said what Gilat is doing with StarBand and Spacenet is both a "business play and a consumer play." The package will compete with both Digital Subscriber Line and Integrated Services Digital Network landline connections, she said. ◗

U.K.'s Virgin Group Plans For U.S. Cell Phone Venture

Anticipates revenue in the 'billions'

BY BOB BREWIN

Virgin Group Ltd. in the U.K. plans to sign a deal within two months with a major cellular carrier to start offering its own branded cellular phone service in the U.S.

Virgin, controlled by airline and music entrepreneur Richard Branson, wants to develop the first global mobile telephone business, said John Tantrum, president of Virgin Mobile USA, which is currently housed in a technology incubator office space in San Francisco.

Virgin Group started offering mobile service in the U.K. this year in partnership with a company owned by Germany's Deutsche Telekom AG. In April, the company signed a deal with SingTel, a subsidiary of Singapore Telecommunications Ltd., to provide mobile service in Singapore, Hong Kong and South Korea. In February, Virgin signed a deal with Cable and Wireless Optus Ltd. in Australia to provide mobile service in that country.

Virgin Group has big plans for the U.S. wireless market. Tantum, a former Mackenzie and Co. consultant, predicted that revenue from Virgin Mobile USA will eventually be in "the billions of dollars."

Tantum said Virgin Mobile USA will follow the pattern already set by the company in its other wireless deals. It plans to form a joint venture with an established carrier, set itself up as a virtual network operator and then resell airtime to what the company views as its target audience: a core of young (ages 15 to 30) consumers the company believes it can attract with a targeted marketing campaign that emphasizes the "fun and innovative qualities associated with the Virgin brand." Tantum noted that the company also expects to "get some corporate business."

Data Services to be Offered

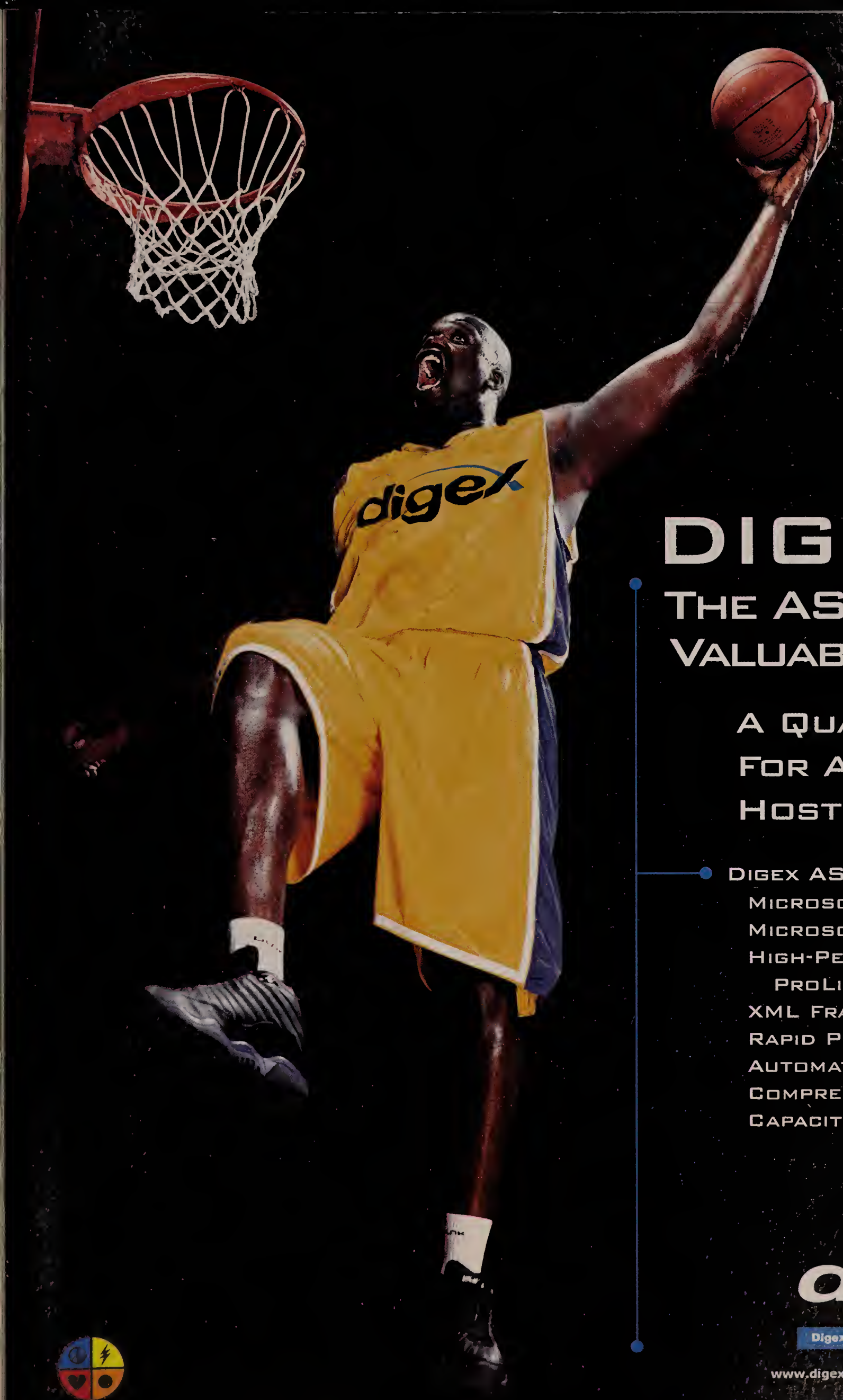
Virgin also said it wants to sell data services in the U.S., starting with the text-message offerings popular in Japan and the U.K. and then expanding to wider band service when network structure permits.

Major U.S. wireless carriers contacted by *Computerworld* last week declined to say whether they are engaged in talks with Virgin. But Ken Woo, a spokesman at AT&T Wireless Group in Redmond, Wash., said he believes Virgin could become a force in the U.S. market because "Branson is very imaginative and creative. . . . Virgin's interest does not surprise me at all."

David Gusky, an executive at the Washington-based Association of Communications Enterprises, which represents telecommunications resellers, said Virgin has timed its plans well to move into the U.S. market. "Until recently, the relationship between wireless carriers and resellers has been adversarial, but that's started to improve," he said.

Virgin has the potential to succeed in the U.S. "because the company is a killer marketer," said Jeff Kagan, an Atlanta-based wireless analyst. "It's not who has the best network; it's who has the best marketing," he said.

Ken Dulaney, an analyst at Gartner Group Inc. in Stamford, Conn., said he doesn't doubt Virgin's marketing skills. "[But] I'm not sure I see the upside," he said. "People want cheaper phones and service, and whoever gives them that wins." ◗



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Outrage Prompts Amazon to Change Price-Testing Policy

Retailer will also refund some customers

BY LINDA ROSENCRANCE

IN THE WAKE OF customer outrage at both a recent pricing glitch and a price-testing policy, Amazon.com Inc. last week said it would alter its price-testing policy and give partial refunds to consumers who paid higher prices than others for similar items.

Over the past two weeks, the company has received negative feedback from customers on two fronts. First, some consumers said they were unhappy with Amazon.com's price-test policy that offered different prices for the same DVD to different customers.

In a separate incident, customers said they were angry when Amazon wouldn't honor lower prices they had been quoted on some DVDs. Amazon blamed a Sept. 7 computer glitch and said it wasn't obligated to sell the items at the incorrect prices.

When the online retailer discovered the glitch, it e-mailed customers who had purchased DVDs at the incorrect prices and asked if they still wanted to purchase the items at their correct but higher prices. This was done in accordance with Amazon's pricing policy, said Amazon spokesman Bill Curry.

That decision apparently upset customers, several of whom have been venting their anger in the chat room of DVD Talk *(http://talk.dvdtalk.com)*, a Web site dedicated to DVDs.

Dan Bither of Wilmington, Del., said he would file a complaint with his state's attorney general if Amazon didn't honor the $16.99 price he was originally quoted for a DVD boxed set. He said Amazon e-mailed him, quoting a price that was 470% higher — $79.99 — than what he was originally quoted.

In an e-mail Bither received from an Amazon.com customer service representative that he forwarded to *Computerworld*, the company blamed the incorrect price on price testing, not a computer glitch.

In the event Amazon conducts price tests in the future, said Curry, it will automatically charge every customer the lower price and has now taken steps to refund the difference in price to customers who paid the higher test price.

JUST THE FACTS

Price Furor

Amazon.com changes its price-testing policy

How it happened:

- Stories surface that Amazon charges different prices for the same DVD
- Amazon says the price discrepancies are part of its price-testing policy
- Angry customers let Amazon know they aren't happy with the policy
- Amazon changes its price-testing policy to ensure that all consumers pay the lowest prices for items
- Amazon begins refunding money to customers who were overcharged

Barrett Ladd, an analyst at Gomez Advisors Inc. in Lincoln, Mass., said Amazon's decision to change its policy reflected its consumer focus.

But, Ladd added, the fact that Amazon.com didn't realize the impact before could mean that "maybe [Amazon] didn't think anyone would find out about the [price tests]."

MORE THIS ISSUE

For more about Amazon.com, see page 83.

Nordstrom to Replace CIO

Slumping sales lead to executive purge

BY CAROL SLIWA

Slumping sales growth has prompted Nordstrom Inc. to replace several key executives, including its first CIO, who departed last week after just seven months on the job.

A spokeswoman for the venerable Seattle-based retailer said the company could announce a replacement for exiting CIO Richard Lennon as early as this week. Lennon joined Nordstrom in February after leaving Louisville, Ky.-based BrownForman Corp.

"We felt we needed a change in the leadership to move forward on our technology initiatives," said Nordstrom spokeswoman Paula Weigand, noting that the company is improving its replenishment and inventory management systems.

Like many retailers, Nordstrom faces significant challenges as it re-evaluates and upgrades its information technology systems, said Carol Ferrara, a retail analyst at Stamford, Conn.-based Gartner Group Inc. Regarding the Nordstrom CIO's departure, Ferrara said cultural issues and organizational adjustments sometimes make it "difficult for the CIOs to become effective and integrated" into family-owned businesses.

"It's interesting, especially in retail, to see the kind of knee-jerk reaction to a bad quarter," Ferrara said.

Bruce Nordstrom, 66, came out of retirmeent to take over as board chairman when John Whitacre resigned last month. Blake Nordstrom is the new president, and Pete Nordstrom heads the full-line store group, replacing Marty Wikstrom.

Continued from page 1

Oracle

per UPU, which is currently $100. For an eight-processor, 700-MHz Intel-based machine, that comes to $560,000.

Tim Talbot, vice president of information technology services at PHH Vehicle Management Services LLC in Hunt Valley, Md., balked. "I said, 'Wait a minute. You are charging us for the whole server, but we are only using part of the server for Oracle.' " Talbot said he was able to get some concessions after negotiating and threatening to go with Sybase Inc. instead. "It's feeling like I'm negotiating with [Computer Associates International Inc.], which is not a pleasurable experience," he said.

Jacqueline Woods, vice president of global practices at Oracle, said the pricing scheme was an attempt to simplify the pricing model and make prices more predictable by eliminating widely varying discounts. The scheme replaced concurrent and named user pricing, as well as a Web-specific license based on 50 concurrent users, all of which were often heavily discounted. Named user pricing is still available as an alternative in some cases.

Woods said the elimination of discounts beyond volume discounts is what may have upset some customers. "Today, if your volume means you get a 25% discount, then that's your discount," she said.

But users said it's not quite true that discounts no longer exist, as exceptions to UPU pricing are available. Woods said that in some cases, users who can prove that only part of their server is to be used for the Oracle database could get an exception and pay for a lower UPU count.

Prevo responded, "It's not the discount; it's the total amount that's just too high." He said the price quoted to him by Oracle was about "10 times" what Microsoft would charge on the same configuration, and a flat comparison among the three major vendors does show significant price differences (see chart).

Prevo did end up buying Oracle, he said, after negotiating a way around the UPU scheme, which lowered the total price.

Stephen Coleman, chief operating officer at SpotOn Inc. in San Bruno, Calif., built his Web navigation service figuring he would host on Oracle — until he saw the price. Oracle's price "was going to be prohibitive," especially for upgrades, said Coleman, so he ported his system to IBM's DB2. (Woods said Oracle does offer start-ups the option of a two-year "term license" for 35% of the price of a perpetual license.)

What's happening to Oracle's users is similar to what happened to mainframe users a few years ago, said David Floyer, an analyst at ITCentrix Inc., a consultancy in Mountain View, Calif. As markets mature — and user dependency on a product grows — vendors with dominating market shares are able to more easily push pricing models that can end up being extremely expensive if users aren't careful, Floyer said. He advised customers to negotiate long-term contractual safeguards.

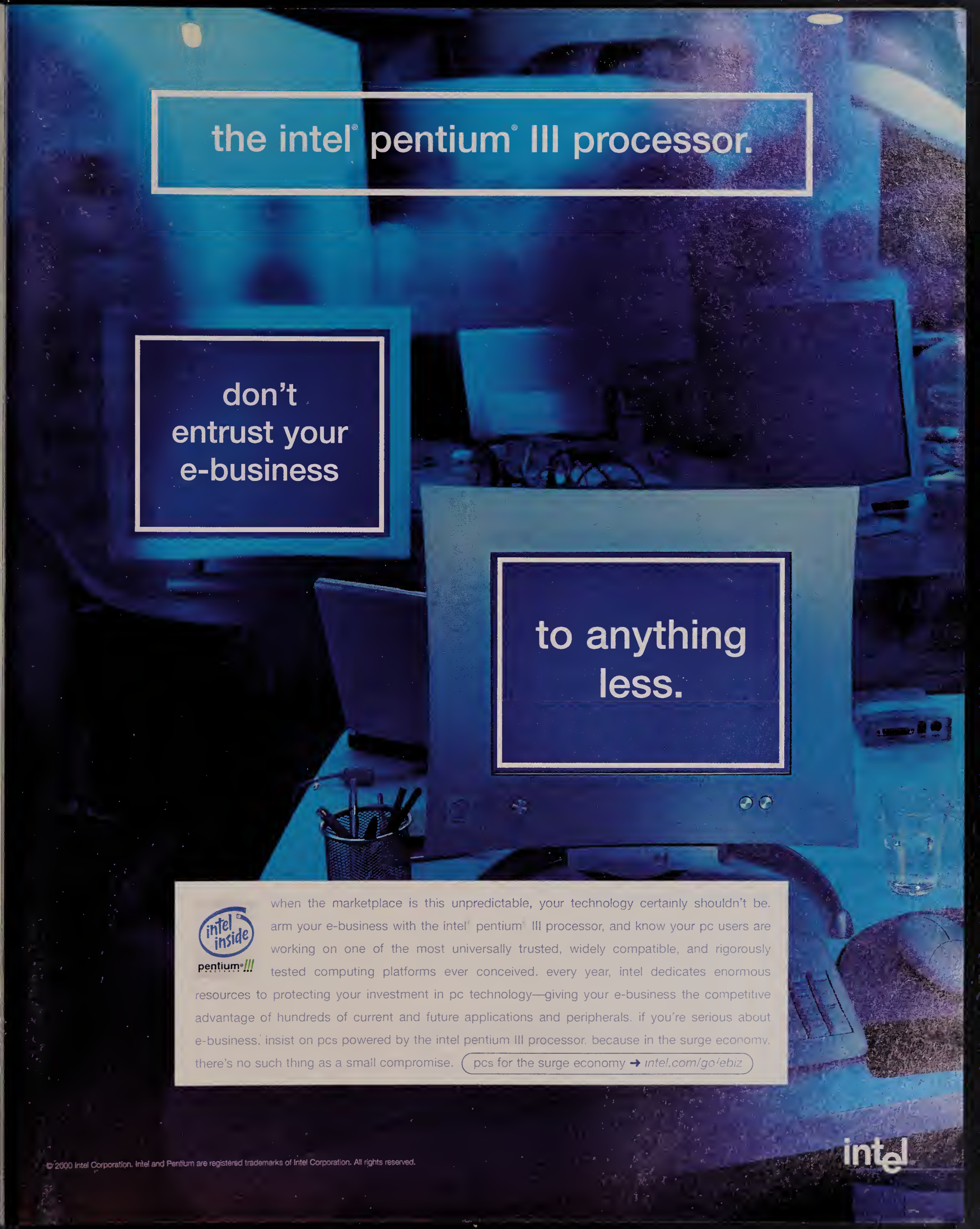
Ditka Reiner, president of Reiner Associates Inc., a San Rafael, Calif.-based consultancy that helps companies negotiate contracts, also compared Oracle's pricing model to that of mainframes. "I've talked to two or three clients that said they'd walked away from Oracle because of this pricing model," she said.

Woods said customers will come to appreciate the terms. "The more I talk to [users] and the more I am able to articulate it, the better reception I am getting," she said.

How It Adds Up

Microsoft and IBM have per-processor, unlimited-access editions of their database pricing. Oracle's Universal Power Unit considers clock speed as well as processor count. Pricing for the database on an eight-processor, 700-MHz Pentium III Xeon machine, with unlimited access:

- Oracle8i Enterprise Edition: **$560,000**
- DB2 Universal Database Version 7.1, Enterprise Edition: **$140,000**
- Microsoft SQL Server 2000 Enterprise Edition: **$160,000**



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Western Union Site Back Up After Breach

Opportunity to copy credit-card numbers shows need for greater security, expert says

BY TODD R. WEISS

WESTERN Union Holdings Inc.'s Web site was out of commission for five days last week after a malicious hacker broke into the site and apparently copied the credit-card or debit-card numbers of about 15,700 Western Union customers.

Peter Ziverts, a spokesman at WesternUnion.com in Englewood, Colo., said getting the Web site back online took two days longer than company officials originally expected after discovering the security breach during a scheduled audit of site performance on Sept. 8.

Before the site went back online last Wednesday, he added, WesternUnion.com's developers fortified the site's security in an effort to ensure that customer data doesn't get compromised again.

Western Union said the security breach that opened up access to the credit-card data was caused by "human error" during routine maintenance and performance management testing work on the Web site, which had been upgraded in June to allow users to send money over the Internet. A key file apparently was left unprotected after the work was done, creating a security hole that could be used to enter the site.

After the breach was discovered, Western Union officials immediately shut down the Web site and began contacting customers who had transferred money online to notify them of the incident. It also informed the National Bankcard Association Inc. in San Diego in an attempt to circumvent any fraudulent use of the stolen card numbers. Ziverts said no illegal attempts to buy goods had been reported thus far.

Elias Levy, CTO at San Mateo, Calif-based Securityfocus.com, an information security portal that reviews security breaches, said Western Union hadn't provided enough information to determine what type of human error was responsible for the leak of credit-card information. But Levy said a breach while the system was in maintenance mode suggests a configuration problem.

More Security Needed

Whoever broke into the Western Union site may not have used the same techniques used to steal credit-card information from other large sites that maintain credit-card databases, but the number of such events suggests there is a need to do more to secure such systems, said Levy.

Levy said one possible solution to the problem, issuing one-time use credit cards, was recently suggested by American Express [News, Sept. 11]. He said that would be a better solution than the proposed Secure Electronic Transaction Standard (SET) promoted by credit-card companies, which would set standards for encrypting and authenticating transaction data.

"One-time credit cards would be easier to implement and would not change the way consumers and merchants do business," said Levy. "It was way too complex for consumers to go out and get certification from banks and download new software." ◗

WesternUnion.com Hit by Hacker

Online money-transfer service shut down to alert customers and repair damage

- Friday, Sept. 8, WesternUnion.com personnel discover that a **hacker entered the site and copied some 15,700 customer credit-card and debit-card numbers** when a file was left unguarded after routine "performance management" maintenance. Site is immediately shut down.
- Company begins notifying affected customers and bank-card associations of the copied account numbers. An unspecified number of customers are told they should get **new credit-card account numbers** to be sure they're protected.
- WesternUnion.com **beefs up security on site** to prevent similar problems, focusing on maintenance procedures and other areas.
- Site **returns online** on the morning of Sept. 13. No note **about the incident is posted** to explain the site outage since Sept. 8.

Continued from page 1

Encryption

tool kit that it said it was prohibited from marketing in the U.S. due to RSA Security's licensing agreements. The company previously charged up to $20,000 for the tools.

David Thompson, an analyst at Meta Group Inc., said having the algorithm in the public domain will allow for uniform cryptographic standards.

"Longer term, increased availability of cryptographic functionality will allow easier and less expensive integration of PKI [public-key infrastructure] security services into applications and thus help overcome a major stumbling block," he said.

The RSA algorithm has become an encryption standard for many e-commerce security applications (see box, Page One). The patent for it was issued to MIT on Sept. 20, 1983, and licensed exclusively to RSA Security. It would have expired on Wednesday, but RSA released its claim on the patent earlier this month. The company, which will still sell its BSAFE cryptographic software, said it released the patent early to counter any "misinformation" regarding its expiration, according to a statement.

Meanwhile, despite the fresh start, some critics last week continued to lament the hold the patent had on the security market for the past 17 years.

"Over the past two decades, the RSA patent and other public-key patents did more to suppress the deployment of public-key cryptography than the [National Security Agency]," said Phil Zimmerman, inventor of personal cryptography product Pretty Good Privacy (PGP). "Now at last, we can breathe freely and implement our own code."

RSA spokesman Steve Casey noted that more than 800 customers have licensed the algorithm to develop more than 1,000 applications, including Microsoft Windows, Lotus Notes and Cisco Systems Inc. routers, and to protect trillions of transactions. "The RSA algorithm has created a de facto standard, and I find it hard to reconcile that fact with suggestions that we have somehow chilled the development of the market," said Casey.

Casey also denied that RSA Security's licensing terms kept companies from using the algorithm to develop their own innovative implementations.

"You can't fault the company for protecting its intellectual property and taking steps to set terms for its licensing agreements. If the terms were so onerous for people, it is hard to reconcile those statements with the fact that it is a de facto standard and there are half a billion copies sold," he said.

Del Torto, a founding employee at Santa Clara, Calif.-based PGP Security Inc., said that because the RSA algorithm was developed using government funds and published in a scientific journal, it should never have been patented. (Casey said that because of the government funding, the patent didn't apply to government implementations.) But Torto said the patent drove people to develop better algorithms and spurred the creation of PGP.

Torto, speaking at a forum sponsored by the San Francisco-based Electronic Frontier Foundation, added that the ubiquity of the RSA algorithm and its longevity will ensure that it continues to be used. It's not necessarily better than newer algorithms, he said, but it is trusted.

Whitfield Diffie, an engineer at Sun Microsystems Inc., is best known for his 1975 discovery of the concept of public-key cryptography. He said that despite some problems, RSA Security "gave pretty good value for the money" by organizing a standards organization of licensees, among other achievements. "We are better off having someone who has an interest in the technology and goes hawking it as opposed to just making it available," said Diffie. ◗

From RSA's Move Comes Free Tool Kit

Baltimore Technologies, a major competitor to RSA Security, said it will give away a version of its KeyTools developer tool kit, which until now has cost developers $10,000 to $20,000.

The end of RSA Security's hold on the algorithm means that Baltimore can produce and sell in the U.S. developer tool kits that use the RSA algorithm without having to obtain a license. Baltimore customers include IBM, Hewlett-Packard Co. and Sun.

Giving away KeyTools will encourage the development of secure applications – and nudge developers to later use Baltimore's PKI and open standard security infrastructure with exposed application programming interfaces, said Andrew Morbitver, a vice president of marketing for Baltimore's U.S. operation.

Baltimore's free tool kit is a limited version of KeyTools Lite and KeyTools Pro that includes all the essential elements needed to connect to a PKI, including cryptographic and digital certificate support, certificate request and retrieval from a Certificate Authority, Lightweight Directory Access Protocol directory support and certificate revocation checking.

– Ann Harrison

MORE THIS ISSUE

IT has to take responsibility for Web site security cracks, writes Frank Hayes. **Page 94.**

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Federal Agencies Get Poor Grades for Security

But CIOs blast report methodology, value

BY PATRICK THIBODEAU
WASHINGTON

A CONGRESSIONAL subcommittee investigating the ability of federal agencies to protect computer systems from terrorists and hackers last week released its first report card on government information security practices, handing out Fs and Ds to about half of the group.

The results were "very dismal," said Rep. Stephen Horn (R-Calif.), chairman of the Subcommittee on Government Management, Information and Technology. "There is no room for complacency, for the stakes are simply too high."

The report card put federal CIOs, as well as the White House, on the defensive at a subcomittee hearing. No federal agency received an A, and the overall grade for the largest federal agencies and departments was D-.

In response, John Spotila, an administrator at the White House Office of Management and Budget, questioned the committee's grading methodology, the report card's value and its implied conclusion that government systems are sitting ducks for hackers.

"I think the reality is that the agencies have worked very hard to protect the confidentiality of information," said Spotila, who asked how an overall grade could be applied to the federal government's 26,000 separate systems. "What does that tell you about how well the most important things are being done, which systems are done well [and] which systems are not?"

But the General Accounting Office (GAO), the investigative arm of Congress, backed up the subcommittee's findings. "The risks are very high and the breadth of the potential impact very wide," said Joel Willemssen, who heads the GAO's information systems division and testified at last week's hearing.

"Federal CIOs are not asleep at the wheel," said John Gilligan, CIO at the Department of Energy. Gilligan defended the efforts of federal agency information technology leaders to improve security. He also faulted a lack of funding and oversight for governmentwide security programs.

The grades were based on a 29-question survey sent to 54 federal departments and agencies. The questions covered six broad areas, including security planning, the protection of software and systems from unauthorized access and the ability to continue operations in the event of disruptions. The GAO audited the results and released a report claiming that federal agencies have "serious and widespread" security weaknesses.

The departments and agencies that flunked included the Small Business Administration and the departments of Agriculture, Justice, Labor, Interior and Health and Human Services. The Social Security Administration had the group's highest score, attaining a B.

Federal CIOs said improvements will take money. "The reality is that until computer security is fully funded, it will remain much too vulnerable," said Ira Hobbs, deputy CIO at the Department of Agriculture. That agency, said Hobbs, fended off some 250 hacker attacks in the last quarter. A few of the attacks succeeded in altering Web pages, but no significant damage was done, he said.

Rep. Jim Turner (D-Texas) said the security problems underscore the need to create a federal CIO position. The CIO would be responsible for IT policy at all federal agencies (see story below). Turner has introduced legislation seeking the appointment of a federal CIO. Security spending "provides the potential for the expenditure of vast sums of federal dollars in a very inefficient way," he said.

Spotila said he disagrees that the federal government needs a CIO. "I just think it's a very complicated problem, it requires a lot of effort within the agencies themselves, [and] it's not something that can be solved with a top-down approach by one person, which is not to say that we don't need more coordination," he said.

Grounded

The U.S. House subcommittee overseeing technology says federal agencies are failing to provide adequate security. It reached that conclusion after conducting a survey of 54 departments and agencies. The GOA audited the results:

B	Social Security Administration
B-	National Science Foundation
C-	Department of Education, State Department
C-	Housing and Urban Development, Commerce Department, Agency for International Development
D+	Department of Defense
D	Department of Veterans Affairs, Treasury Department
D-	Environmental Protection Agency, General Services Administration, NASA
F	Office of Personnel Management; the departments of Health and Human Services, Agriculture, Small Business Administration, Justice, Labor and Interior
Incomplete	Departments of Energy and Transportation

Hearing Stresses Need for Federal CIO Post

$40B in IT spending worries lawmakers

BY PATRICK THIBODEAU
WASHINGTON

The resistance of federal officials to create a CIO post to manage enterprisewide information technology is bucking a big trend and is coming under attack in Congress.

The federal government — which is perhaps the world's largest IT user — is set apart from nearly all major corporations and most states by not having one person responsible for setting and coordinating IT policy. Federal departments and agencies now spend about $40 billion annually on IT.

This investment is being made "without the benefit of significant, governmentwide leadership," said Rep. Jim Turner (D-Texas) at a hearing held last week on the CIO issue by the House Subcommittee on Government Management, Information and Technology. Turner said he believes the lack of a coordinating authority is leading to duplication in IT spending. He's one of two lawmakers who introduced a bill seeking the creation of a federal CIO post.

Proof Positive

The idea of establishing a federal CIO position isn't new. But the White House's refusal to create such a post is under fire, especially after the appointment of a Y2k czar, John Koskinen, to coordinate federal and private responses to the year 2000 problem.

"The government's success in combating the year 2000 problem demonstrated the benefit of strong central leadership," wrote David McClure, a General Accounting Office official, in a report released last week recommending the appointment of a federal CIO. A federal CIO could set priorities for the government and coordinate electronic government activities and cross-agency projects, wrote McClure.

But Sally Katzen, deputy director of the White House Office of Management and Budget (OMB), defended the OMB's current role as an IT coordinator and said her agency has already achieved much of what critics say a federal CIO would bring. "Every agency is not reinventing the wheel," she said. "We have an effective forum for sharing best practices."

The OMB's only mistake, said Katzen, is that "we have done a lousy job in communicating how much progress we have made." But Katzen also urged the committee not to seek legislation with the presidential election coming up. "Legislation now would only tie the new president's hand," she said.

Growing Trend

The trend toward centralizing government CIOs is growing: 23 states have CIOs who report directly to their governors. In 1998, only eight states had such an arrangement, testified Otto Doll, South Dakota's CIO and president of the Lexington, Ky.-based National Association of State Information Resource Executives, which represents state IT managers. In 24 states, CIOs report to cabinet-level officials.

"One powerful dynamic of IT is that it can enable and integrate all government services and initiatives," said Doll. "A CIO is necessary to convene key information stakeholders."

Rep. Tom Davis (R-Va.) has also introduced a bill to create a CIO position. "I strongly believe that establishing an empowered federal CIO is essential," he argued.

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Sun Introduces Fee Cap for Java 2 Enterprise Edition

BY LEE COPELAND

Sun Microsystems Inc. last week introduced a new licensing and royalty plan for its Java 2 Enterprise Edition (J2EE) 1.3 specification. The new plan is aimed at eliminating some of the public squabbling that has erupted in the past over fees.

Although Sun refused to disclose financial terms, it said the licensing policy calls for a per-annum cap on royalties and fees that each licensee must pay Sun for access to the Java source code.

Members of the Java Community Process (JCP) executive committee — which comprises 15 software vendors, including Sun, IBM, BEA Systems Inc. and Oracle Corp. — have two weeks to review the licensing terms and submit comments to Sun.

The vendors are also under orders from Sun to not discuss specific licensee terms until the conclusion of the committee review process.

"Sun is not obliged to take these recommendations, but the whole purpose is to arrive at an acceptable set of licensing terms without having a publicly acrimonious debate about it," said Carl Zetie, an analyst at Giga Information Group Inc. in Cambridge, Mass. "Having that debate conducted in the press is not good for Java."

Balance of Power

For J2EE 1.2, the 22 current licensees each negotiated fees separately with Sun. Although Sun's standard J2EE contract calls for application server licensees to pay fees equal to 3% of net sales, most vendors negotiated unique licensing contracts, Sun confirmed.

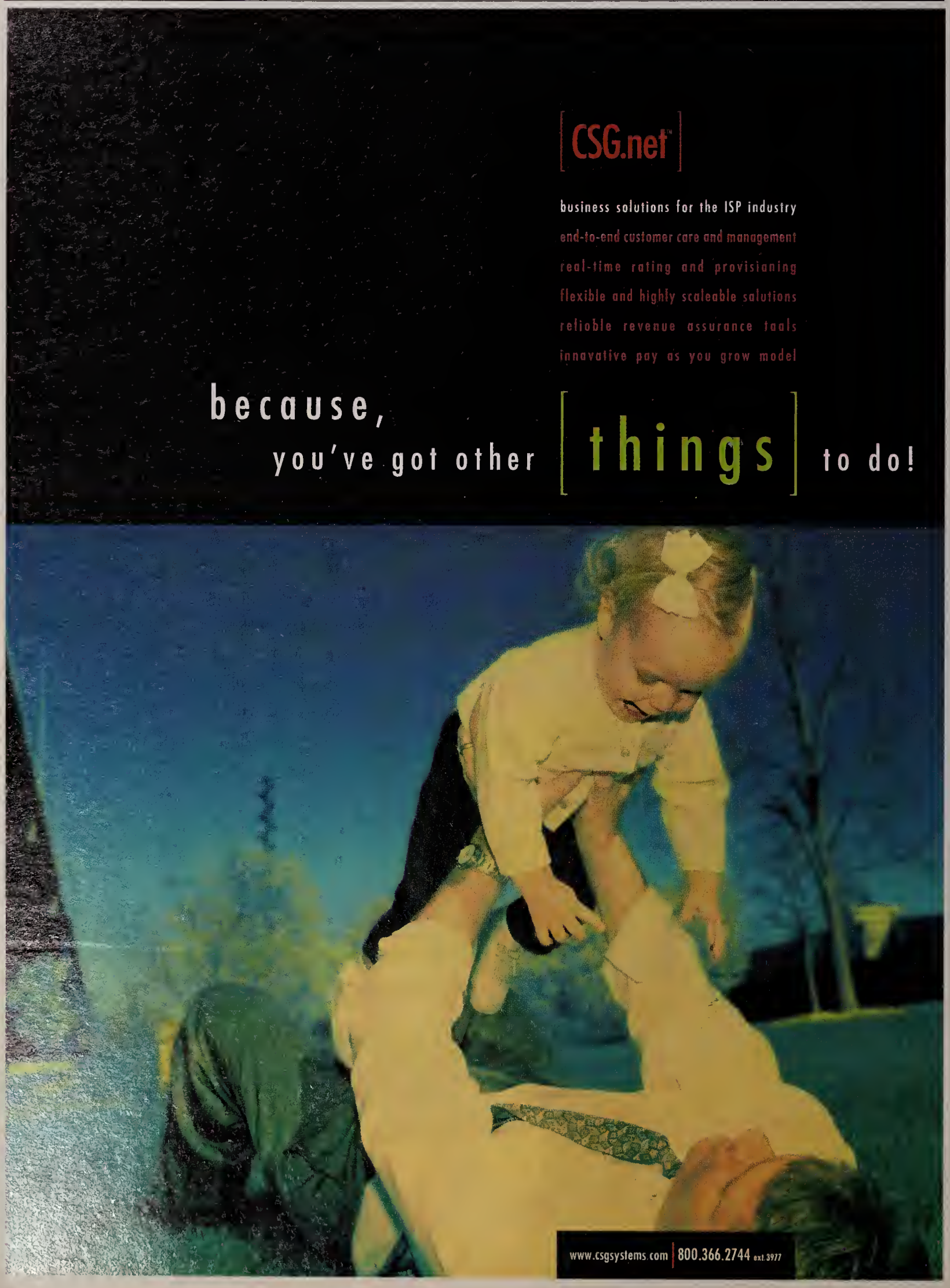
Several vendors had balked at that flat-fee approach after it was announced for J2EE 1.2 licensees, said Rick Saletta, marketing team leader for J2EE. Sun hopes to curb that "backlash" with the new price ceiling structure, he added.

Zetie said Sun's amended policy should quell some of the negative response to J2EE license fees that emerged in the past. But, he added, Sun still needs to do more to share control of the specification process with other vendors. He noted that Sun appoints 10 of the 15 JCP executive committee members, in addition to having veto power and a seat on the committee.

Sun said it's considering decreasing its number of nominees to the JCP — from 10 to nine — in response to criticism from vendors and analysts.

IBM, a JCP executive committee member and longtime Java licensee, said it's still reviewing the new policy terms.

"In the final analysis, Sun has the final word on the technology," said Scott Hebner, director of e-business marketing at IBM. "[That] is inconsistent with the nature of the Internet. Java will prosper more if it becomes a true open standard."



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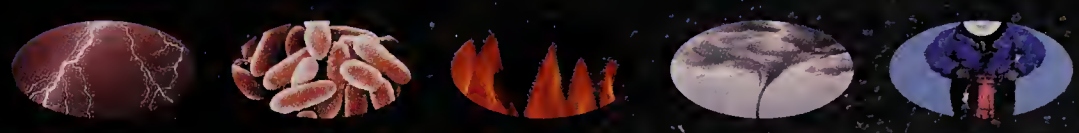

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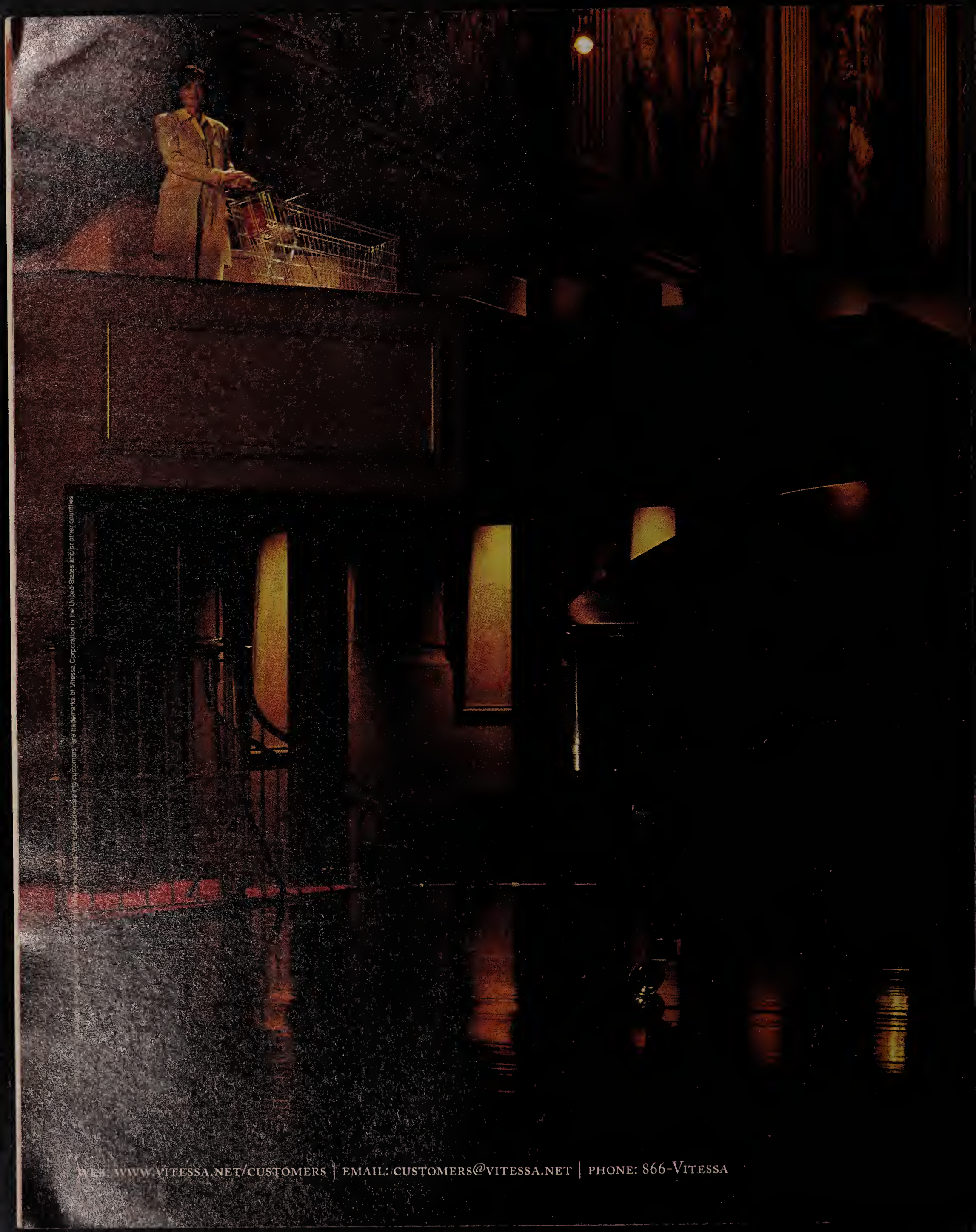

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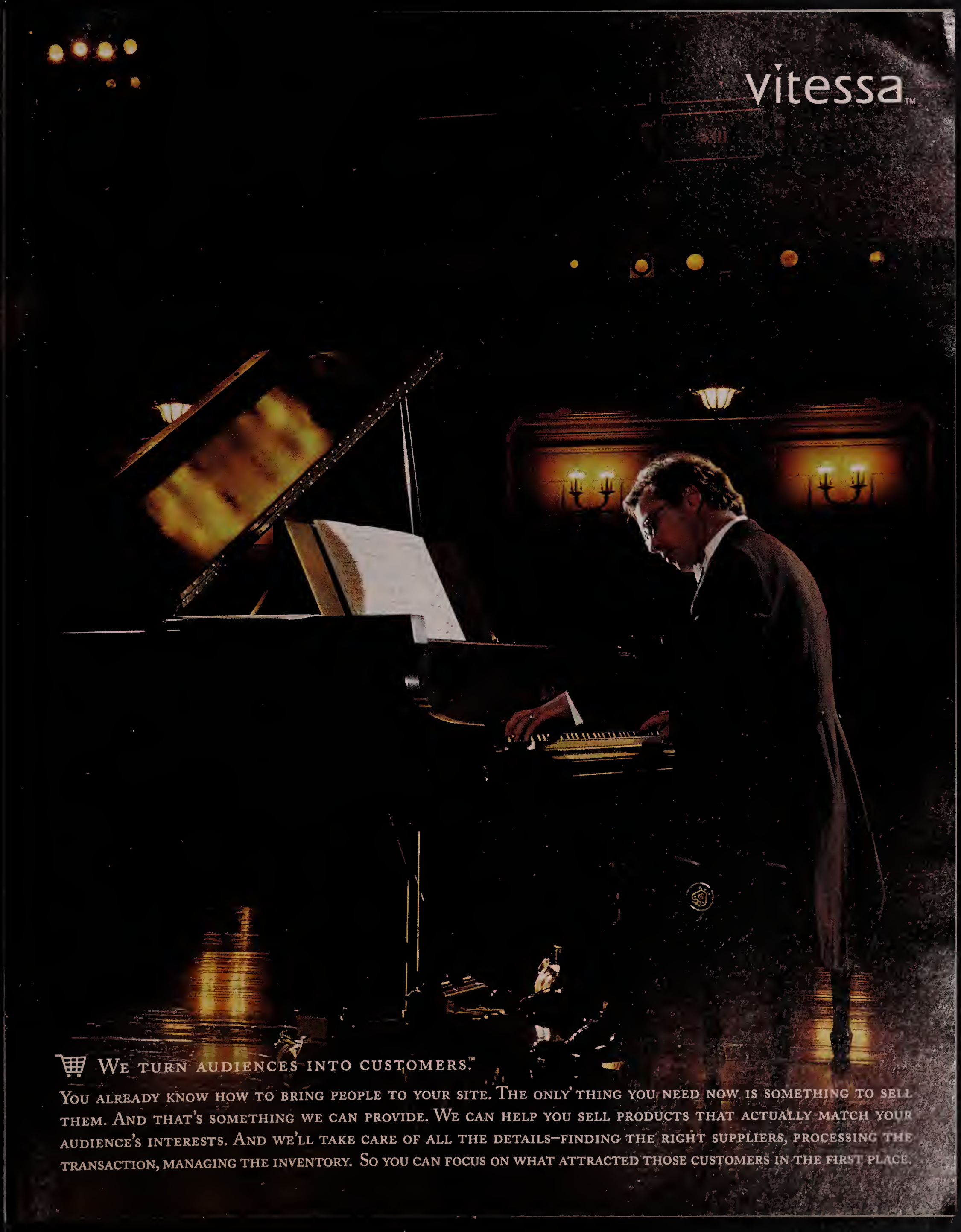

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BRIEFS

Compaq Sees Need For New Partners

Compaq Computer Corp. said it's looking for new types of companies to partner with. The hardware vendor has mainly partnered with software vendors such as SAP AG and Oracle Corp., as well as service providers like America Online Inc. and San Francisco-based Digital Island Inc. A spokesman said Compaq's "next-generation partners" will include e-commerce-centric companies like Pleasanton, Calif.-based Commerce One Inc. and Andover, Mass.-based CMGI Inc., as well as Internet telephony firms.

Inktomi Buys Live Net Broadcast Company

Inktomi Corp. in Foster City, Calif., said it will purchase Fast Forward Networks Inc., an online broadcasting software development company, in a stock deal valued at about $1.3 billion. Fast Forward, a 2-year-old start-up in San Francisco, makes products that can profile online audiences for broadcasters.

Barnesandnoble.com To Buy Fatbrain.com

Barnesandnoble.com LLC in New York plans to acquire Fatbrain.com Inc., an online bookseller in Santa Clara, Calif., that specializes in technical publications, in a deal valued at approximately $64 million. In addition to being the third-largest seller of technical books online, Fatbrain offers a service that allows companies and individuals to distribute their own written material through its Web site in digital or hard-copy form.

Short Takes

RAMBUS INC., a U.S. designer of high-speed memory interface technologies, has asked the U.S. INTERNATIONAL TRADE COMMISSION to look into allegations of unlawful imports by South Korea's HYUNDAI ELECTRONICS INDUSTRIES CO. . . . Paul Maritz, group vice president of MICROSOFT CORP.'s platforms strategy and developer group, will retire after 14 years at the firm. Maritz will act as a consultant for Microsoft on strategic and business issues.

CEO: PeopleSoft Has Changed for the Better

First-half profits show vendor on upswing

BY MARC L. SONGINI

WHEN **Craig Conway** took over as CEO of PeopleSoft Inc. last September, the business applications vendor was facing major challenges. Among them was a weakening demand for its enterprise resource planning (ERP) software — as well as that of bigger rivals such as SAP AG and Oracle Corp. — that helped saddle the company with a $177.8 million loss for last year.

Key members of PeopleSoft's management team defected, and the once fast-growing company laid off more than 400 employees. Conway also was in the unenviable position of taking over for PeopleSoft founder Dave Duffield, who was popular with users of the Pleasanton, Calif.-based vendor's software.

A year later, PeopleSoft has finally released its Web-based PeopleSoft 8 applications upgrade after pushing the shipment date back from the middle of last year. And for the first half of this year, PeopleSoft reported a $32.7 million profit. Conway spoke with *Computerworld* about his company's fortunes.

Q: How is the response to the initial release of PeopleSoft 8? Did the delay hurt?

A: What delay? You may be confusing us with Oracle. At our user conference [last] October, we indicated we would [ship] PeopleSoft 8 by Sept. 1, and we did. The reaction has been phenomenal.

Q: Is the future of PeopleSoft in ERP, customer relationship management (CRM) or a mix of the two?

A: CRM has become the largest-selling product line. [But] any enterprise applications company almost by definition is going to provide both front-office and back-office applications. And we feel that is the definition of e-business: the integration of customer, supplier and employee.

Q: We've heard a lot about the softening of the ERP market. What's the key to success there?

A: That's very old information. The news on the street today is that over the last three to four months, the enterprise [applications] market is coming back. It was temporarily subdued in 1999 — Y2k caused a lot of companies to stop spending on very large enterprise systems. [But] every analyst on the street in the last 30 days has been reporting that the market is making a strong rebound.

PEOPLESOFT'S Craig Conway says the enterprise market is rebounding

Q: Do you have plans to address the difficulty of ERP and CRM installations for users?

A: In the last 12 months, all [enterprise application] implementations have improved. The average PeopleSoft implementation is now less than five months. That's been the result of rapid implementation tools. Large global systems can be done in less than six months. That's the state of the industry now.

Q: How much has the company changed since you came on board, and how do you think you guided that change?

A: It's a very, very different company. We've retooled our management team and business processes, so we're a better-run company. And I think the company's morale and confidence is at an all-time high. PeopleSoft was certainly hardworking but also a place where the culture was very casual. When customers visited, they were likely to see dogs and cats in the office because it was a family atmosphere. I didn't come in a draconian way to try to change the company overnight. [But] I think I added an ingredient of intensity and accountability and competition to the corporate culture.

Q: You recently dropped about 70% of the outside consultants that worked with PeopleSoft on application projects. Why did you do that, and how has it played out?

A: About a year ago, we met with our consulting partners. There was a large component of [them] that really didn't offer great value to PeopleSoft. We culled our partners down to concentrate only on ones that really returned a lot of value. Our partners are now more committed than ever. ◗

Siebel Gobbles Up Another Software Rival

BY MARC L. SONGINI

Siebel Systems Inc. last week announced a deal to scoop up rival Janna Systems Inc. in an acquisition that Siebel executives hope will give the San Mateo, Calif.-based vendor a leg up in selling customer relationship management (CRM) software to financial services companies and insurers.

With the ink barely dry on the four previous acquisitions it has made since January, Siebel said it would extend the buying spree by purchasing Toronto-based Janna in a stock swap valued at $975 million, based on the Sept. 11 closing price for Siebel's shares. The acquisition of Janna — which had sales of $13 million last year and $12.6 million during the first half of this year — is expected to be completed in the fourth quarter.

Through the deal, Siebel will expand its line of CRM applications by adding Janna's Enterprise Suite 2001 software, which lets financial institutions and insurance companies synchronize their transactions with customers in various channels, including Web storefronts, call centers and resellers. Janna's users include Merrill Lynch & Co., Lehman Brothers Holdings Inc., First Union Securities and The Allstate Corp.

Siebel said it plans to combine the Janna software and its own applications for financial services users into a single Web-based product suite, due for release next summer.

> [Financial services] is a market Siebel has slowly been trying to crack.
>
> A REPORT FROM CONSULTING FIRM AMR RESEARCH INC.

In a report on the deal that was released last week, Boston-based consulting firm AMR Research Inc. said the buyout of Janna neutralizes a tough competitor and "it looks to be a well-spent billion dollars" for Siebel. Financial services "is a market Siebel has slowly been trying to crack, but too often [it] loses deals to Janna," the AMR report said.

But integrating the two lines of software won't be easy because of overlaps between them, AMR added. "It will be tricky deciding which pieces will be used to form the new [unified] product," according to the report.

Steve Bonadio, an analyst at Meta Group Inc. in Stamford, Conn., agreed that it will likely "take a serious amount of time to integrate the [Janna] applications into the Siebel fold." But he said the acquisition should give Siebel users "some rich functionality" that the CRM market leader's software doesn't currently support. ◗

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Lotus Applications to Be Available for Rent

Version ready for application service providers, sans Notes

BY JENNIFER DiSABATINO

LOTUS DEVELOPMENT Corp. last week announced its ASP Solution Pack, which will allow resellers to host a bundle of Lotus applications and resell them piecemeal to smaller customers or business units within a large corporation.

Lotus said it will maintain its pricing model geared toward large corporate customers, with a minimum $10,000-per-month commitment from companies hosting the software.

"Only the serious partners need apply," said Mark Levitt, an analyst at Framingham, Mass.-based International Data Corp.

Lotus CEO Al Zollar extolled the importance of application service providers (ASP) and said Lotus won't be in the business of hosting its applications.

CEO AL ZOLLAR: Lotus won't be an ASP

In catering to the service providers, the ASP Solution Pack makes it easier to set up new accounts through a graphical interface, which spokesmen at several ASPs said could now be accomplished by sales staff.

The advantage for service providers and small to medium-size companies is that end users can be provided access to products from Cambridge, Mass.-based Lotus such as Domino Web Mail and calendaring, QuickPlace, Sametime instant messaging, WebSphere applications and other Domino-based applications, without the expensive in-house information technology support.

John Whiteside, president and CEO of netASPx, a Lotus partner and ASP in Herndon, Va., said Lotus applications are complicated to install and maintain and expensive for most organizations' IT departments.

"This package is supposed to make the Lotus technologies more scalable," Levitt said.

While Notes isn't currently part of the ASP Solution Pack, Lotus officials indicated that there will be an announcement on Notes outsourcing within several weeks.

ASP to Mine Web Data

BY MARK HALL

Data mining and analysis might become more pervasive with the arrival of digiMine Inc., an application service provider (ASP) that officially opens for business this week.

The Kirkland, Wash.-based ASP, which was founded in March by former Microsoft Corp. employees, last week unveiled its digiMine Services, including the Data Slurper.

The Data Slurper assembles Web server data from Oracle, SQL, DB2 and other databases and securely transmits it to the company's data-mining application, which is hosted off-site.

The ASP then runs a series of predefined reports on everything from page-view to online-event analyses.

Today, organizations require a "special infrastructure to do data analysis," said Frank Gillett, an analyst at Forrester Research Inc. in Cambridge, Mass.

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Wireless Internet Initiative Advances

BY TODD R. WEISS

Expanding on an initiative begun in 1996, Intel Corp. and nine other companies have announced a pact that they said they hope will help bring easy-to-use wireless Internet technologies to the masses.

The Mobile Data Initiative Next Generation (MDI-ng) will take over where the original MDI left off, according to the group. That work began with IBM and others, focusing on mobile computing via cell phones.

The new group said it will expand that work by reviewing standards to remove technical and market barriers to widespread Internet use through handheld devices.

Alan Reiter, an analyst at Wireless Internet & Mobile Computing in Chevy Chase, Md., said the new group will find ways to expand wireless Internet use. "Basically, Intel wants to sell chip sets," he said. "It knows that standardization is generally good for vendors as well as consumers."

Other standards groups do exist, however, so the marketplace is still contested, he said.

Andy Seybold, editor of the newsletter "Andy Seybold's Outlook" in Boulder Creek, Calif., said he was less enthusiastic about the group's approach.

"This whole wireless Internet thing has been overhyped and underdelivered," he said.

Daniela Singer, a public relations specialist at Intel GmbH in Munich, said two of the original MDI members, L. M. Ericsson Telephone Co. and Nokia Corp., both strong supporters of the Wireless Application Protocol (WAP), may join MDI-ng later.

Ericsson and Nokia didn't respond to inquiries by press time.

WAP is one of the issues that MDI-ng plans to address, she said, adding that the group doesn't intend to set its own standards. ◗

Gillett said digiMine offers a general-purpose architecture for data mining and analysis that can generate standard reports, or users can pay to have custom programs written that go beyond the preconfigured analyses.

Yongmin Chu, marketing research manager at Dialpad.com Inc. in Santa Clara, Calif., has been using a beta version of Data Slurper and plans to continue using the service. He said his voice-over-Internet Protocol company has used digiMine Services to help with a range of issues, including "user drop-off during our registration process."

Chu added, "It's been very convenient for us because we haven't had to add more software to our PCs."

Mimi Green, a market analyst at Dialpad.com, said the company also benefited from not having to hire more employees to develop and manage a similar application.

Usama Fayyad, digiMine's CEO and co-founder, said his firm's top competition would come from information technology shops building their own data-mining software. ◗

Alliance Forms to Set Web Standards

Seeks standards to take wireless Net access beyond cell phones

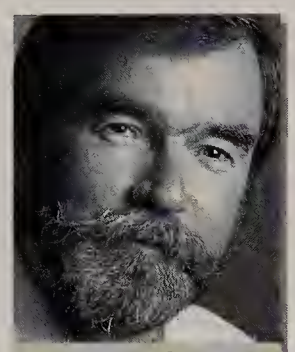
- The **Mobile Data Initiative Next Generation (MDI-ng)** will take over from the original MDI, which was established in 1996 to set standards for cell phones.
- **Members of alliance are:** BT Cellnet Ltd., Dell Computer Corp., France Telecom SA, Fujitsu Siemens Computers, Hewlett-Packard Co., Intel Corp., Motorola Inc., Siemens Mobile, Sonera Corp. and Toshiba Corp.
- The group will focus on standards compatibility, application scalability among devices, security, reliability and **packet-switched wireless networks.**
- The group hopes to set specifications that allow **different devices to work** together effortlessly.

MARK HALL

Information gap

THAT WAS NO manufacturing problem putting Bridgestone/Firestone and its defective tires in the glare of an angry public. That was an information problem. One that may indeed kill a venerable American brand. The final answer about what went wrong and why isn't yet known. When it is, I bet we'll learn that with the right kind of integrated information system, managers at the Decatur, Ill., plant that was the source of the faulty tires would have discovered the flaw before it became a problem.

Today, that system doesn't exist. At a press conference held last month early in the debacle, executives from both Bridgestone/Firestone and Ford, whose SUVs ride on the afflicted tires, said they lacked "specific information as to why this is occurring." Although more is known today than a month ago, we're still in the dark about why executives at the two companies were in the dark.



MARK HALL is *Computerworld*'s West Coast editor. You can contact him at **mark_hall@computerworld.com.**

Just last week, both Bridgestone and Ford committed to installing supply-chain information systems to prevent anything similar happening in the future. But they are going about it like pugilists instead of century-long partners, which goes to show the depth of destruction this information gap has caused.

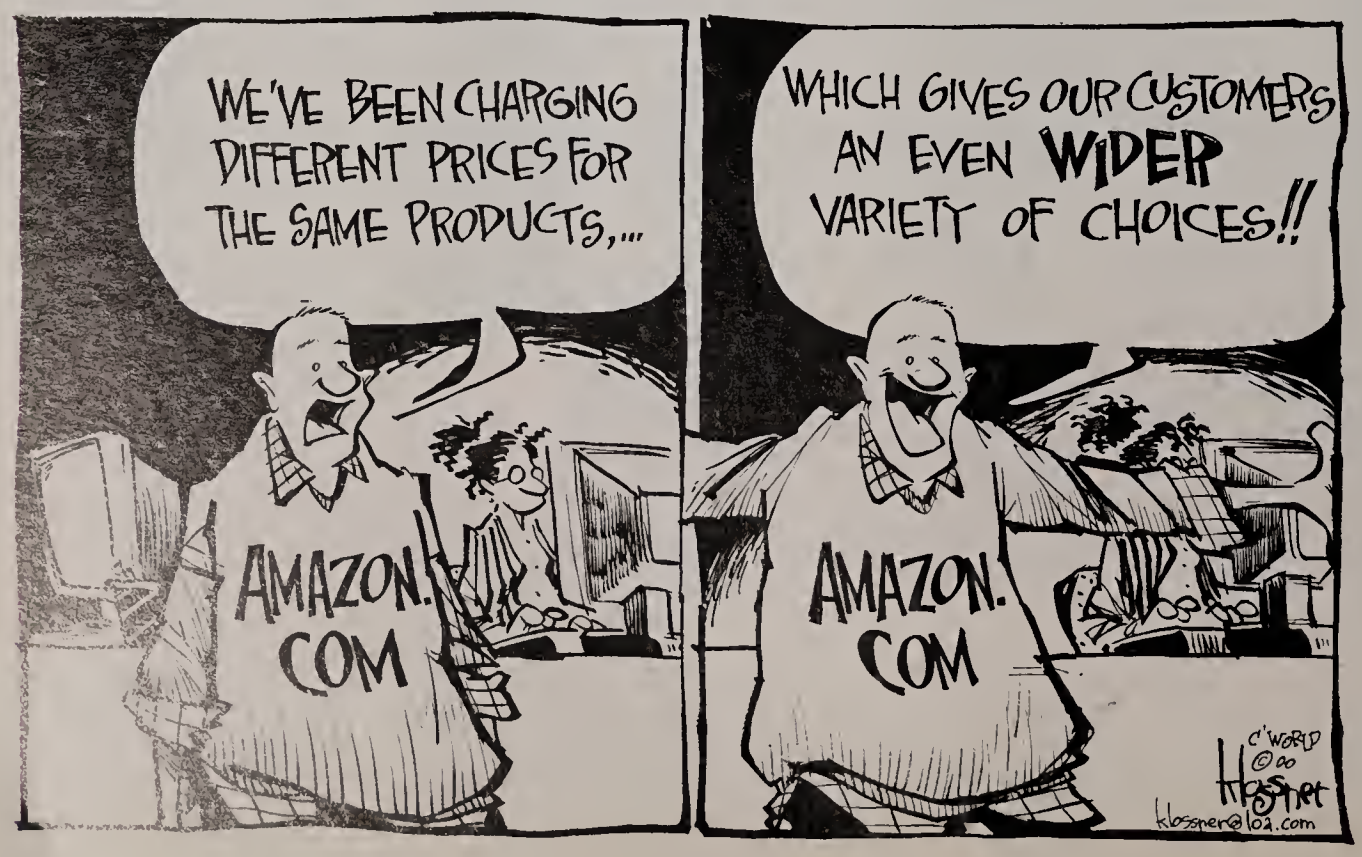
In last week's tit for tat before a Senate committee, Ford CEO Jacques Nasser said, "This new system will require that tire manufacturers provide comprehensive, real-world data on a timely basis."

John Lampe, executive vice president at Bridgestone/Firestone, also came out in support of "early-warning systems" but called for "tire-pressure indicators in the vehicle."

With the Firestone brand teetering, the company recognizes that it must act. Lampe said, "Without regard to costs to the company, Firestone has elected to make this voluntary recall because of its commitment to public safety and consumer confidence."

Suddenly, money is no object. I wonder if making an IT investment a couple of years ago would have prevented this fiasco by getting the right information to the right decision-makers? Less than what it will cost to replace 6.5 million tires and regain the confidence of the more than 1 million car owners involved.

This may prove to be the costliest information gap in corporate history. One, we'll discover, IT could have filled, if it had the chance. ◗



DON TAPSCOTT

Forget the skeptics: WAP is here to stay

DON'T BELIEVE the WAP skeptics. Wireless Internet access is the direction in which we will soon stampede, and right now, Wireless Application Protocol (WAP) is still on track to lead the thundering herd. So it's time to start incorporating WAP into your company's business model and IT infrastructure.

WAP is a set of technical specifications to guide wireless-phone and personal digital assistant (PDA) manufacturers, network operators, content creators and application developers. The intent is to establish a global standard for accessing the Internet via wireless devices with small display screens.

DON TAPSCOTT is chairman of Digital 4Sight (*www.digital4sight.com*) and co-author of the newly released *Digital Capital* (Harvard Business School Press). Contact him at **dtapscott@digital4sight.com.**

Until recently, WAP enjoyed growing acceptance, but suddenly, its skeptics abound. Much press play was given recently to reports from Europe that wireless customers aren't flocking to WAP sites. The criticism of WAP revolves around two issues: It's an inadequate technology, and it was designed to meet a need that doesn't exist.

To someone accustomed to the lush environment of large-screen desktop broadband Internet access, WAP can seem absurd. The typical 1-sq.-in. WAP screen doesn't display graphics, and because the access is wireless, the speed is achingly slow.

But the comparison is bogus. WAP wasn't designed for surfing the Web; its purpose is to retrieve specific information for people on the move.

A smart, creative WAP application was recently implemented in San Francisco. The transit service is using technology from NextBus to track the real-time position and speed of buses, streetcars and trains. Transit riders can now use their handheld devices to access the NextBus WAP site to find out when the next bus will arrive at their stop. (For updates on innovative WAP sites, sign up for the Cool WAP Site of the Day on *www.fiercewireless.com.*)

And if you run a coffee shop or newsstand close to a stop, would you like to send a commercial pitch to riders who have more than 10 minutes to wait? As more sites such as this come online, consumer demand for WAP devices and services will soar, along with commercial opportunities.

WAP is also well suited for intracorporate use. For mobile employees who simply need price up-

dates, inventory status and similar information, why bother with the cost and upkeep of laptops if browser-equipped phones or PDAs would be just as effective?

Obviously, WAP specifications will have to rapidly improve to keep pace with advances in hardware; otherwise it will be eclipsed. As wireless speed increases, processors become more powerful and drain less battery power, and displays expand and include color, consumers will become more demanding. They'll want streaming audio and video, for example.

But until then, the current WAP standards make sense and enjoy broad support. We are at the awkward chicken-and-egg point in WAP's development, but early adopters of the technology will be rewarded. ◗

JOHN GANTZ

Europe is getting ripe for more Net business

I'VE BEEN LOOKING at the worldwide stats for Internet use, and I can tell you this: Europe has come alive! Europeans are going online in droves.

Just two years ago, Europe had only half as many Internet users as the U.S., and Internet commerce there amounted to less than 10% of what the U.S. was doing.

But next year, the number of Internet users in Europe will surpass those in the U.S. — to more than 150 million — and by 2004, its Web-based commerce will be almost 90% of that of the U.S.

The upshot? If you have neglected to localize your Web sites for customers across the pond, you had better start. Europe has a bigger economy than the U.S. It's a huge market.

JOHN GANTZ is a senior vice president at IDC in Framingham, Mass. Contact him at **jgantz@idc.com.**

The good news is that most companies haven't done much to localize their Web sites. In an April survey of Internet executives, International Data Corp. (IDC) discovered that only half have done *anything* to make their Web sites reach out better to international visitors. Only 20% support a second language, and a measly 12% can take orders in a foreign currency. So nobody's cracked the code yet.

The difficulty of dealing with Europe, of course, is that you can't really treat it as a region. Internet users don't behave the same way, even in similar countries. For example, while almost a third of Swedish Internet commerce consumers buy stocks online, less than 5% of Danes do. Almost 50% of the French make travel purchases online, vs. 20% in the nearby Netherlands.

And that's the first key to localization. Language is not as important as culture. Put it this way: If you offer multiple languages but don't change the user experience to fit the culture, you have wasted your investment in translation.

To tackle the European market, you'll need to proceed in a measured way. Most firms start by adding information on their main corporate Web sites about operations in foreign countries and then later translate that brochureware verbatim.

The next step requires local, in-county input, either from your own operations or a localization business partner. In this case, site material is updated by foreign nationals and tailored to local markets. This can be quite political — retaining a common look, feel and user experience on the site but allowing for local control of content.

The last stage is full distribution of site control to local in-country sites, where the sites may have to adhere to corporate guidelines and use standard platforms but are managed locally.

So, despite the Web's "worldwide" nature, you won't have a truly localized Web site if your company doesn't have Europe-based operations or a business partner. Trying to do business overseas — dealing with customs, local currencies, privacy regulations, performance, languages and logistics — will be tough online if you or your partner hasn't already done it online.

The IT challenge in localization is providing the infrastructure — WANs, security systems, directories, catalogs, back-end databases and transaction systems, cache and proxy servers — to support linked Web sites in multiple countries. That includes training, support and help desk.

If your Web site goes international, so will your IT department. If you already have a multinational shop, developing a global Web strategy may require centralizing some IT functions that were previously farmed out to the other countries. If you aren't multinational, you'll have to learn how to become so in a hurry. ◗

READERS' LETTERS

Some cultures better off without IT

I TAKE EXCEPTION to Ernest J. Wilson III's assumption that spreading IT throughout the world is the best possible course of action ["Take Next Steps to Narrow the Global IT Gulf," News Opinion, Sept. 4].

I am always amazed by people who assume that everyone in the world wants to live the same way we do in the West. There are peoples throughout the world who actively resist the "cultural pollution" of electronic communication. A few smiling bureaucrats with shiny giveaways are not going to convince anyone that the Internet is less offensive than television. And educating the workforce to handle new technology opens the possibility of massive abuse (higher learning in the U.S., for instance, is rapidly becoming less about education than about political indoctrination).

Perhaps before giving away the engine that has provided the G8 nations with such vast wealth, those who would suffer the greatest loss should be consulted. And perhaps before inflicting such costly and painful change on our unsuspecting neighbors, those who would suffer the greatest loss should be consulted.

Mark Berrett
Senior scientist
CSA Inc.
Petaluma, Calif.

One solution to H-1B

I AM SURPRISED how many people have ill-informed opinions on the H-1B program [Readers' Letters, Aug. 7]. Statistics show only how many H-1Bs have been issued, not how many candidates actually came to the U.S. In addition, many candidates ask multiple companies to process their visas, to increase their chance of getting a project in the U.S. It is a big misconception that H-1B consultants are hired because they can work for less. During my 10-year career, I have seen H-1B workers making six figures, with fat bonuses and stock options.

The quota should be removed, but candidates should be required to enter the U.S. within 30 days after the visa has been approved. This will not only stop H-1B visa abuse, but it will also make the highly needed IT skills available to the companies suffering shortages.

Mahesh Goyal
President and CEO
Fast Forward Implementation Technologies Inc.
Irving, Texas

AS/400's record speaks for itself

IN THE Workstyles piece "What's It Like to Work at the U.S. Space & Rocket Center?" [Business, Aug. 21], the writer comments after the interviewee reports that his mission-critical systems run on an AS/400 that his environment is more low-tech than one might expect. But how many low-tech systems can make these claims?

AS/400 has the highest satisfaction rating of its independent user group, as surveyed by *Computerworld* in 1999; allows deployment of Linux-, Java-, Unix-, Windows 2000- and Domino-based applications on a single server; has never had a reported virus while customers have had security functions operational; has had more than 300 different processors in its history but no customer has ever had to recompile its application code; has proved in a two-year study that it can deliver 99.97% availability; has proved its operating system can operate for more than one year without ever requiring a reboot, in hundreds of customer shops; and is the only system listed in the top 10 performance of all four public commercially oriented benchmarks.

Gerald Kern
Senior analyst
Maumee, Ohio

Ad stooped too low

COME ON, guys. You're stooping way too low for my liking. What's up with the Data Return/Victoria's Secret ad [Sept. 4]? I thought this was an informative "Newspaper for IT Leaders." How was an ad such as this accepted?

Chris Allinson
Warwick, R.I.

COMPUTERWORLD welcomes comments from its readers. Letters will be edited for brevity and clarity. They should be addressed to Jamie Eckle, letters editor, Computerworld, PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax: (508) 879-4843. Internet: letters@computerworld.com. Include an address and phone number for immediate verification.

ALEX TORRALBAS

OS developers must carry the ball on security

WITH THE SPATE of viruses and worms that have — finally — grabbed everyone's attention, it bears stating what should be, but sadly isn't, obvious: Security solutions rest with the developers of operating systems.

The overwhelming majority of viruses, worms and Trojan horses that can affect PCs require access to the operating systems that could stop these attacks cold without the need for antivirus-softwarelike approaches. And thwarting these attacks is well within the existing technical capabilities of Microsoft, Apple or any other operating systems developer.

ALEX TORRALBAS is an independent IT consultant and Visual Basic developer in New York. Contact him at **alext@atc-software.com.**

Here's a modest list of suggestions:

■ The "system files" and program directories should be a lockbox. Nothing should get copied to them, altered or deleted without explicit authorization from the user. This directory shouldn't be used for "INI" files and the like. Instead, create a separate "scratch" folder for these purposes, one that the operating system ignores completely — that is, nothing can run inside this "sandboxed" folder.

■ Program files should be encoded with encrypted keys derived from their pristine, unaltered final compile. Upon installation, this identifier should be noted by the system and stored, again encrypted. Before any program would run, the operating system would be able to recalculate the key based on the program's current state: If there were no match, the program wouldn't run.

■ Installation programs such as InstallShield and Wise should have to comply with operating system manufacturers' requirements in creating encrypted security certificates based on the contents of the installation to ensure that installation files haven't been altered.

■ Nothing in your PC should talk to a network or modem without you being alerted to that fact. Obviously, we would need the ability to grant "always" permissions for LANs and even our Internet connections — but for the latter, an application-specific permission list would prevent Trojan horses from snooping while permitting "safe" programs to run.

■ We should be able to lock down our browsers from sending a site any information we don't want sent. A simple "anonymous" setting would prevent outsiders from gleaning information such as our network identifications and computer names.

■ We should be able to create lists of restricted words and numbers, such as Social Security and credit-card numbers, that would trigger an alert if they were detected as being passed to a port.

■ All TCP/IP ports should be in stealth mode at all times to thwart hackers, unless a PC-side program requires it, and then it should require an OK from the user.

■ The operating system should allow for one-click encryption or decryption of any file or folder.

■ Nothing should write to the boot sectors, any "run" sections of the registry or similar start-up files without our knowing it. Period.

■ The operating system should offer a sandbox mode similar to Windows' Safe Mode to test questionable applications before we run them. After all, freeware, shareware and homemade software aren't going to go away. Lots of it is great, safe and useful. But some were created by dishonest people. You never know!

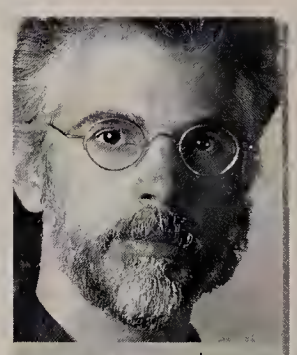
Anyone who sees security as an add-on is way off target. These aren't add-ons; these should be givens. An operating system for the new, connected world must take security into account.

Bill, Steve, Linus: Just do it! ◗

WILLIAM M. ULRICH

Using an ASP need not mean losing control

LAST YEAR, a real estate management executive told me that his and several other real estate companies were forming an application service provider (ASP). The ASP would handle information technology functions for these firms, allowing them to eliminate in-house applications, IT staff and related infrastructure. The business plan stipulated that a dozen executives from several real estate firms would join the board of the new ASP. They planned to take it public based on projections that hundreds of companies would sign up for its services. While the executive who talked with me said he felt the ASP was beneficial, he had some concerns.



WILLIAM M. ULRICH is president of Tactical Strategy Group Inc. and cofounder of Triaxsys Research LLP. Contact him at **tsginc@cruzio.com.**

This increasingly common ASP business model exposes clients to certain risks. The executive wondered: What if the company were to unfairly cater to the companies of the founding directors? Of greater concern was the potential for the ASP to establish a large client base but fail to provide acceptable services. And there was the possibility that the ASP might ignore certain problems encountered by clients if the founding directors' companies didn't suffer the same problems. He envisioned a worst-case scenario where the ASP failed and left countless clients with no backup processing capacity.

ASP risks are real, but why are they more significant than those in other IT relationships? Every software license or service agreement has some associated risks, but the ASP model magnifies the impact of those risks. Using an ASP to handle processing requirements means that you'll be curtailing in-house processing capabilities.

The failure of a traditional outsourcing agreement might cause a company to reassert control over its information infrastructure. But in the case of an ASP arrangement, companies eliminate or downsize information infrastructures and shift most IT functions to the ASP. The risks increase as your processing infrastructure shrinks and your dependence on the ASP grows.

The case of Pandesic [Page One, Aug. 21] helps support these concerns. The announcement of a shutdown and subsequent layoffs at Pandesic caused major concerns among its customers. Fueling these concerns was the fact that Pandesic's CEO didn't respond to customers' phone calls.

Given that many ASPs are still in their infancy, it's unclear how large the ASP market and the associated risks might grow. But as more companies look to ASPs, they're being told to take certain precautions. ASP clients have been warned to audit an ASP's financial statements, build contingency plans in case of its failure, ensure that company data doesn't end up in bankruptcy court and obtain the rights to an ASP's source code for the applications being used.

But these precautions treat only the symptoms of a business model in need of retooling. If you're looking to form or join an ASP, consider that traditional ownership models, where investors fund a start-up and take it public, offer clients little control over their future. An ASP assumes control of your information management function, an element of your business you may not want to manage but need in order to survive. Given the high stakes, you should consider a scenario in which every client has ownership rights in the ASP and input as to how it functions.

Shifting the ASP business model to a member-owned entity allows clients to have access to decisions impacting their future. Consider:

■ Forming a member-owned ASP involves creating a privately held corporation and distributing ownership rights among current and future clients. Clients would exercise control by placing representatives on a series of regional boards.

■ Profits could be filtered into a publicly held entity, split among the ASP's employees or reinvested in new ASP offerings. This decision depends on numerous factors, including who owns the assets, market potential and third-party vendors who provide services on behalf of the ASP.

If you're shopping for an ASP, or being asked to help form one, consider the benefits of having control over the future of your information-processing capabilities. An ASP is an extension of your virtual enterprise, and you should consider this when establishing these ASP relationships. ◗

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BUSINESS

EARNING AN A+ IN E-COMMERCE

For 137 years, J. L. Hammett has been the first stop for educators buying supplies. And while it doesn't fit the mold of a fast new dot-com, the company has built a successful e-commerce operation. ▸ 38

WIRELESS WAVE

As the wireless revolution takes off, mobile technology companies are carting out an array of new products to connect to the Internet, writes Pimm Fox. The problem is that they aren't paying enough attention to what business customers really need, he says. ▸ 38

ONE-STOP BANKING

Banks are starting to offer customers the chance to bring all their accounts onto one screen. It's a service that's bound to take off, say analysts. ▸ 40

FASHION CENTS

Talbots is forging ahead with expansion plans, making a record investment in information technology that not only revamped the clothing retailer's aging systems, but could also help it realize more profits. ▸ 42

CALLING ALL SPORTS FANS

While sports fans compose much of the IT department at ESPN.com, it isn't all fun and games, says John Zehr, vice president of technology. While they do make time for the occasional baseball game, workdays average about 12 hours, and employees are always on call. ▸ 44

UNTAPPED RESOURCES

The demand for IT talent is at an all-time high. Yet Latinos are far from being well represented among U.S. IT workers. To address the problem, some companies, like Xerox, have established programs designed to tap into the Latino community. ▸ 52

ALL-STAR TECHIES

CIOs are in the spotlight these days. If you haven't already been tapped to take calls from the press, it won't be long. In an interview with *Computerworld*'s Melissa Solomon, William D. Friel, an IT veteran at Prudential Insurance, offers tips on how to work with the media. ▸ 54

BIG BROTHER

Feel like you're being watched? Well, you probably are. Online companies are learning that doing business on the Web depends largely on their ability to know their customers. But online profiling has sparked controversy about how far businesses can go before personalization turns into an invasion of privacy. ▸ 56

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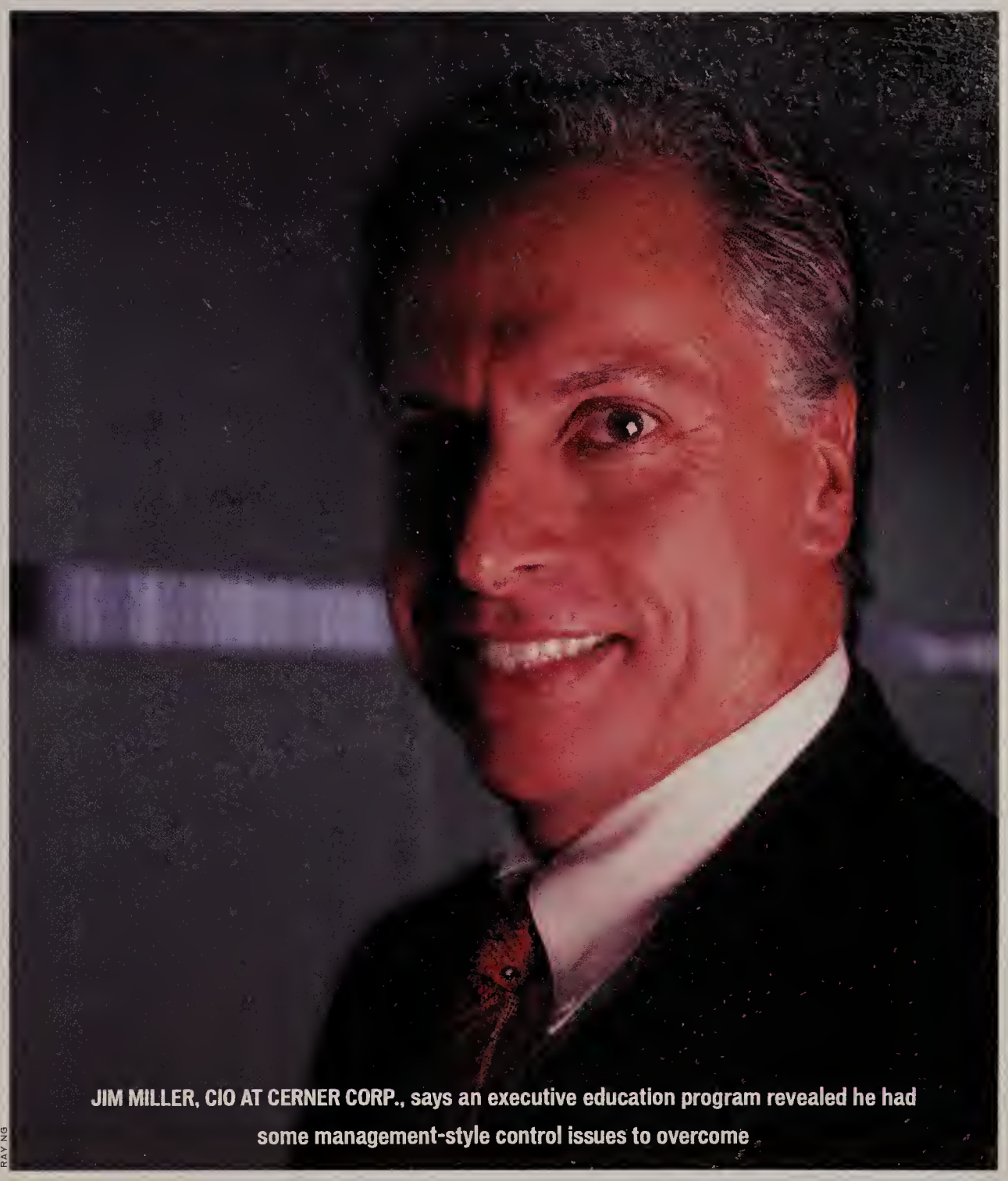

RAY NG

JIM MILLER, CIO AT CERNER CORP., says an executive education program revealed he had some management-style control issues to overcome

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46

At the Head of the Class

School supply firm finds niche online

BY JULIA KING

As a 137-year-old purveyor of pencils, chalk, posterboard and other classroom supplies, J. L. Hammett Co. isn't exactly a name that leaps to mind in e-commerce circles.

But take a closer look at its online performance over the past two years. J. L. Hammett's entry into the e-commerce arena, which began as a cost-cutting strategy in October 1998, has yielded a $9.5 million increase in sales, a 200% increase in average-size orders and a 46% reduction in transaction costs, from about $130 to $70 per order.

"By August of this year, we did as much business online as we did in all of last year," said Rick Holden, CEO of the privately held Braintree, Mass.-based company.

Moving its time-honored business online was a smart move, said Dan Sholler, an analyst at Meta Group Inc. in Stamford, Conn.

"The premise of Hammett's original business and why teachers bought from them as opposed to at a Staples store is because they had relationships with their customers," he said. Online, "they didn't cut off those relationships, but they did improve their margins because salespeople now don't need to do the administrative work of taking orders."

At the heart of Hammett's e-commerce strategy is E-Zone, an electronic-procurement system based on sell-side software from Ironside Technologies Inc. in Pleasanton, Calif. Teachers and school administrators who used to place complicated, paper-based orders can reach the ordering system via an Internet browser.

"Before, it took a good eight weeks to do what I can do in one week now," said Kathy Donaldson, a purchasing clerk who buys thousands of items for four schools and 325 teachers in the Penn Yan school district in Penn Yan, N.Y.

One reason for the quicker turnaround is that teachers can browse the district's customized electronic catalog, which includes prenegotiated prices, and select the items they want to order at Hammett's Web site. This triggers an e-mail request for approval by Donaldson's office.

J. L. HAMMETT CEO Rick Holden says online business is solid

Teachers and purchasing agents can also assemble large orders throughout the school year and "suspend" them on Hammett's site. Then, as the school boards approve budgets and release funds, buyers can go back online and confirm the orders for delivery to schools.

Meanwhile, fees that Hammett collects from seven partners/advertisers, such as Crayola Co., the Easton, Pa.-based crayon and marker company, cover about 30% of what it costs Hammett to maintain and update the Web site.

On the back end, the Ironside Technologies system is fully integrated to Hammett's IBM AS/400-based warehouse and inventory replenishment systems as well as the company's accounting system. This has worked to cut order processing times from as much as three weeks, to about three hours, Hammett officials said.

"When an order comes through on the Internet, it is assigned an invoice number on the AS/400 [and] sent to our warehouse, where it's received with a [radio frequency] scanner, picked and packed," said David Merigold, director of marketing. From there, the warehouse system automatically triggers an order to replenish inventory, and an invoice is sent out.

"We're not rekeying anything, so our order accuracy is up, and there's no place for orders to get backlogged," said Merigold. "We're also stripping out a lot of costs on our side plus on the customers' side because it doesn't take schools a lot of time to generate orders."

Online Incentive

Hammett included its 80 salespeople — who still make sales visits to school districts — in its online strategy by giving them incentives for migrating customers to online. For example, Kathy Oakley, a sales representative in MetroWest, an area near Boston, said she still earns a commission on the sales her customers place online. But she earns an even bigger commission when she migrates them to E-Zone.

"I don't feel as though I'm losing at all," she said. ◗

PIMM FOX/VOICE FROM THE VALLEY

Blinded by wireless

ALL THOSE WITH cell phones, please raise your hand. With the other hand, please turn over your wallet.

It may not be as blunt, but that's the business model for the mobile and wireless industry. Plain and simple.

Trouble is, carriers such as Sprint PCS, Voicestream, AT&T Wireless and Nextel are trying to determine just what you will buy and at what price, and frankly, they haven't got a clue as to what will motivate you to turn your terrestrial office into a mobile workforce.

Demo Mobile 2000 in Pasadena, Calif., makes me believe there is plenty of neat technology trying to surf the wireless wave, but most of it will make a business customer yawn.

Carriers and service providers at the conference are pinning their hopes on new data services: everything from taking pictures with your cellular phone to ordering movie tickets with your PalmPilot. They're forgetting that business pays for the bulk of data services, not consumers.

Maybe they're just blinded by the wireless explosion.

According to J. P. Morgan & Co., wireless will account for 34% of all telecommunications service revenue growth over the next five years. With compound annual growth of 15% for wireless over the next five years, that means total industry revenue of more than $100 billion by 2005 — about a quarter of the whole telecommunications industry.

That's a big bag of money to be chasing. Last year, the wireless industry celebrated by adding 16.8 million subscribers, up 21% from the 13.9 million added in 1998.

This growth is coming at a price. Revenue per subscriber is flattening. The average price of a wireless minute, around 25 cents today, will fall to 9 cents by 2005, according to research from the wireless industry and J. P. Morgan.

The only customers forecast to pay more are those who have data and voice service. Now, about 1% of all subscribers take some kind of data service. That will grow to 20% by 2005, paying an average $25 per month — or about $10 billion per year.

PIMM FOX is *Computerworld*'s West Coast bureau chief. Contact him at **pimm_fox@computerworld.com.**

And many of those will be businesses using wireless connections to get information, fill orders and check results.

Despite a global audience of almost 200 million subscribers by 2005, business users may reject lots of this new technology because it doesn't do anything for their bottom line.

While the new wireless digital camera from LightSurf Technologies Inc. grabs the cool award, it doesn't seem to be a pressing need for IT users.

By contrast, Wayport Inc. offered conference attendees high-speed mobile Internet access that actually worked.

The mobile workforce needs reliable connections, not frilly service. Indeed, Frank Spindler, vice president of marketing at Intel, said 80% of the company's workforce will use or are using laptops as their sole computing resource.

Undoubtedly, there will be wireless services mobile professionals crave. Santa Clara, Calif.-based Bevocal Inc. offers quick and convenient access to personalized Internet content and services via any telephone.

In a nifty onstage demonstration that included the destruction of a Pacific Bell Yellow Pages directory, C. Mikael Berner, a founder and CEO, used a cell phone to search for a hotel he didn't know existed in Gun Barrel, Texas, by asking a series of questions that were answered automatically. He obtained directions and location information and only spoke to a human when actually making the hotel reservation.

If this is the year the mobile and wireless convergence takes off, firms hoping to profit from the boom in data services had better start thinking about the business customer. Otherwise, they'll be disconnected. ◗

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Information and Communications

Citibank's Aggregation Portal a Big Draw

BY MARIA TROMBLY

A month after New York-based Citibank launched its free online account aggregation service, some positive results have begun filtering in.

For example, half the users aren't Citibank customers.

That's just one reason why other major banks are expected to move quickly to set up their own versions of MyCiti.com, which lets online customers view all their banking, brokerage and credit-card accounts on a single screen.

Most of the top 50 banks will announce their services within the next three to four months, said Richard Bell, an analyst at TowerGroup, a Needham, Mass.-based financial services consultancy.

Several banks have already done so. For example, San Francisco-based Wells Fargo & Co. said its aggregation service, which is provided by Atlanta-based VerticalOne Corp., will be available in the fourth quarter. And New York-based The Chase Manhattan Corp. said its aggregation service, powered by Yodlee Inc. in Redwood Shores, Calif., will be online by the end of the month.

Banks that don't offer aggregation services may find customers jumping to competitors, analysts said.

According to a recent Gartner Group Inc. survey, more than one-third of online bank customers are willing to pay to have all their financial accounts available in one place. As a result, banks will have to offer account aggregation to retain customers, said George Barto, an analyst at the Stamford, Conn.-based research firm.

Opening New Markets

Citibank's experience with its aggregation site — which is available free to anyone who has an account at a U.S. financial institution — bears this out.

Noor Ahmed Menai, director of consumer portals at Citigroup Inc. in New York, wouldn't say how many visitors are using Citibank's portal. However, he said thousands are signing up to use the service each week. "The rate of uptake is much higher than we expected," he said.

Even though it isn't generating any revenue from the site, Citibank plans to use MyCiti.com to cross-sell mutual funds and other products to its existing customers and market those services to noncustomers, said Menai.

Like Chase, Citibank decided to go with Yodlee for its account aggregation. Yodlee uses a combination of screen-scraping technology and direct links to aggregate data from 1,500 banks, brokerages, billers, retail sites and e-mail services.

Analysts said none of the major banks has decided to build an equivalent system on its own because it's been more cost-effective for banks to hire vendors like Yodlee to build and manage the technology.

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A Classic Makeover

Talbots' sizable IT investments are aimed at helping the women's clothing retailer step out with even bigger long-term profits. By Carol Sliwa

A RETURN TO ITS classic roots has made The Talbots Inc. one of the hottest retailers in the country. And fashionable upgrades to its core business-management systems are expected to help the women's apparel chain squeeze out more profits.

The 53-year-old retailer has rebounded from a disastrous 1997, when it experimented with trendier styles in an unsuccessful attempt to attract younger buyers. Hingham, Mass.-based Talbots is now on track to achieve record sales and earnings and is forging ahead with plans to increase its number of stores from 686 to more than 1,100 by 2005.

Talbots executives recognized that to execute those ambitious plans, they couldn't cling to the mainframe-based systems and homegrown applications that had been running the business for more than two decades. So they boosted the information technology budget 30.5% in 1998 and another 21.8% last year to invest in leading-edge technologies.

So far, those investments have included the following:

- A merchandise planning system from JDA Software Group Inc. in Scottsdale, Ariz., that's more flexible and allows for more detailed analysis than Talbots' old spreadsheet-based approach.
- PC-based point-of-sale terminals from IBM that will let Talbots develop more customer-oriented services.
- An e-commerce site built on Microsoft Corp. technology.
- A Web-based replenishment system.
- A more user-friendly customer service system.

The new customer service system is faster and has more features than the previous system, say early users. "If you're trying to find other things to go with [an article of clothing], it's great," says Jennifer Lambert, who recruits temporary help at Talbots.

"Two years ago, we were a 100% mainframe-based shop. Today, somewhere between 50% and 60% of our functionality comes from the mainframe," says Randy Richardson, who joined Talbots two years ago as senior vice president of information services.

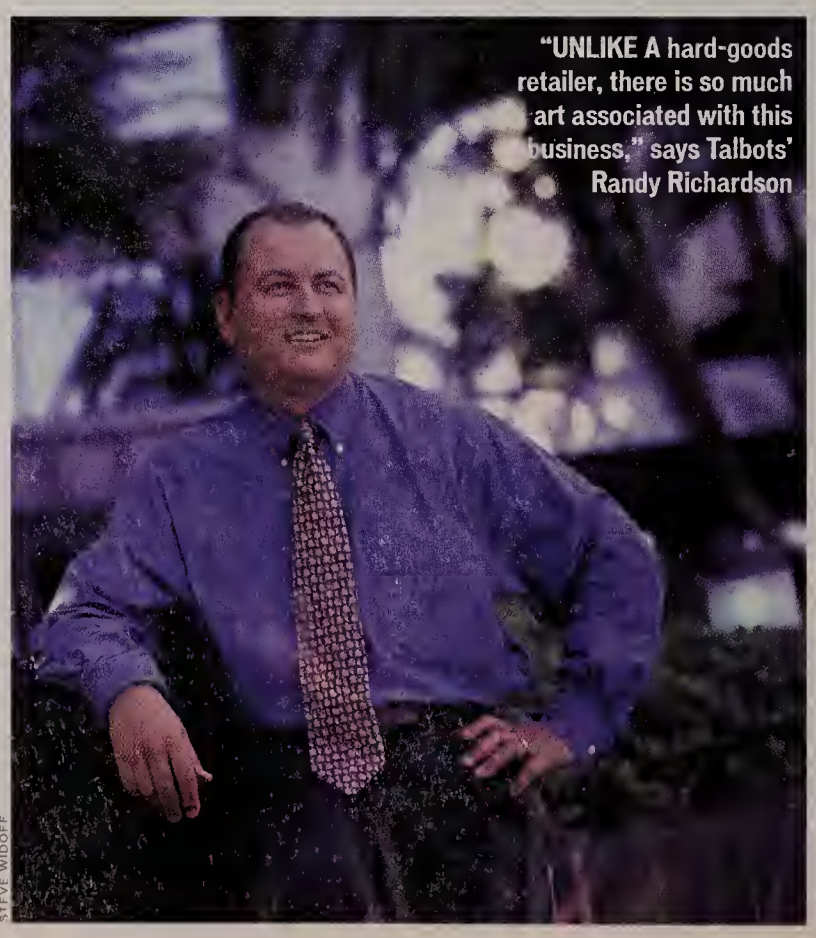
Retailers have traditionally been slow to scoop up new technology, and for some, "it's perfectly acceptable to leave in 30-year-old systems and build on top of them," says Janet Suleski, an analyst at AMR Research Inc. in Boston. But Talbots' expansion provided a prime opportunity to adopt new technology and address its needs for "more robust and scalable systems," she adds.

"Prior to their bad year, they were really successful because they read the fashion [trends] correctly for their type of customers. Quite frankly, they could live on less-than-adequate IT infrastructure because they got the fashion part of it right," says Brian Hume, president of Martec International Inc., a retail consultancy in Atlanta.

But going forward, IT should play an important role and impact the bottom line, Hume predicts. For instance, Talbots' merchandise planning system should reduce out-of-stock situations and lost potential sales, and its new data warehouse from Retek Inc. in Minneapolis will bring critical customer-trend analysis. Supply-chain management will also be key.

"You have to reckon about two years before you see any real paybacks from any of these projects," Hume notes.

Talbots found itself falling behind some prominent technology-savvy retailers, such as The Limited Inc. in Columbus, Ohio, and The Gap Inc. in San Francisco, according to Hume. "Basically, if you're that far behind, you've got to do something very fast," he says. "It's not a case of catching up. You've almost got to leapfrog."



"UNLIKE A hard-goods retailer, there is so much art associated with this business," says Talbots' Randy Richardson

STEVE WIDOFF

Finding the Right Fit

While retailers have increasingly turned to technology to stay competitive, Richardson has no illusions about IT's impact on Talbots' success. His 17 years of experience with retailers, including 10 years at The Limited and four years as CIO at AnnTaylor Stores Corp. in New York, have shown him that IT "typically adds only a little bit to the [financial] picture, and profits rise because the merchandise is clicking," he says.

"Unlike a hard-goods retailer, there is so much art associated with this business," Richardson says. "What IT allows you to do is exploit the ups, and [it] gives you a safety net for the downs."

Laying the foundation for the day when they would play a greater role in exploiting the ups, Richardson and his troops recognized that technology was only one piece of the puzzle. The tougher job was changing the culture of a largely Tampa, Fla.-based IT staff that had grown distant from business colleagues up north. The IT staff also lacked the procedural discipline to pull off the rapid-fire development projects it now regularly delivers.

"When Randy came in here, I can remember he sat down with the three of us, and one of his first questions was, 'What projects are you working on?' And we couldn't answer that question," says Jon Wendell, a 14-year Talbots veteran who is director of the Tampa data center and reports directly to Richardson, along with Carol Hewitt, director of application systems development.

"We had multiple directors within applications and sometimes even within the applications group. We wouldn't know what the retail side was doing vs. the catalog side. They could be working on projects, and we could be duplicating our effort over here," recalls Hewitt, a 12-year veteran.

But that has all changed. Richardson brought in a sophisticated project-management system and promoted a more disciplined, collaborative approach. He also encouraged IT staffers to use videoconferencing to bridge the gap with the Hingham-based staffers and asked them to log more air miles to be closer to end users.

Since he flies every week, spending two days in Hingham and three in Tampa, Richardson says he figures no one can complain about travel. He says he wants his 130-person IT staff to think of itself as a business unit rather than as a technology unit.

"We're approaching it from a business perspective first," he says, "and supporting that perspective with technology."

AT A GLANCE

Loosening The Belt

As Talbots rebounded after 1997, it pumped more capital investment into its IT operations.

1995
Sales: $981M
Income: $62.6M
Capital spending on IT: $1M

1996
Sales: $1B
Income: $63.6M
Capital spending on IT: $1M

1997
Sales: $1.1B
Income: $5.8M
Capital spending on IT: $4M

1998
Sales: $1.1B
Income: $36.7M
Capital spending on IT: $6M

1999
Sales: $1.3B
Income: $58.5M
Capital spending on IT: $10M

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WORKSTYLES

What's It Like to Work at . . . ESPN.com

Interviewee: John Zehr, vice president of technology
Company: ESPN.com
Main location: The ESPN Engineering Group (information technology for the dot-com side) is in Seattle, and the editorial and content staff is in Bristol, Conn. The main IT group for ESPN's cable network is also in Bristol.
Number of IT employees: "In the range of 150."
Number of employees (end users): Information not available due to policy set by parent company The Walt Disney Co.
ESPN.com has a lot on its plate – a new e-commerce play with Beaverton, Ore.-based Nike Inc., the Olympics coverage controversy (dot-com news organizations aren't being permitted streaming media rights) and the start of the professional and college football seasons. What impact does all that have on the IT staff? "People are working seven days a week and doing a lot of work from home, checking in to make sure things are working – especially if it's a feature integrated with the broadcast side. On opening day of the football season, everyone is in the office, and we create a mini-tailgate party."
Is this a peak time of year, or is it always this busy? "We have two really busy times – the launch of the two football seasons and the NCAA basketball tournament in March, because it coincides with the launch of the baseball season."
Workday: "About 12 hours, usually from 8 a.m. to 8 p.m. Some work into the wee hours if they're on deadline. It's driven by the sports schedule."
Must people carry beepers? Cell phones? Yes. "Pretty much everyone goes through an on-call rotation. How often you get called is driven by events. On an NFL Sunday or a college football day, you can be counted on to get paged."
Since you're part of a larger company, is compensation more traditional, or is it typical of dot-coms? "It's more like a dot-com. We all get stock options in DIG [Disney Internet Group, formerly Go Networks], which last November was issued as a separate tracking stock from Disney."
Any anxiety about the dot-com demise? "Being a leader in the sports category and being part of the Disney family, I think the investment here is viewed longer term than at a lot of dot-coms."
Upcoming projects: "We'll be doing some big enhancements to the gamecast applications – adding multimedia, streaming video, interactivity, maybe an instant-messaging component and real-time notification that alerts you when someone hits a home run. Wireless is also a big initiative now – to extend our content and gamecasts to the wireless base. Scores are already available on wireless, but you'll be able to make fantasy football trades, and some gamecast applications will be available."
IT career paths: "We have two tracks – management or a more technical path, where you can become a principal or senior engineer. The unique thing here is that as you move through management, you get involved in other media areas that ESPN touches, like broadcast planning or magazine planning. It's very unique to have a software background and be in a brainstorming meeting about how a TV show might work."
Security badge/card needed to get into the building or office? Yes. "We're in the Smith Tower, a turn-of-the-century building that actually has elevator operators. So you have to show your badge to get off the elevator."
Office mascot: "Rodney – one of the guys who works here. We call him 'The Bull.' He's the guy who plans all of our internal events, like Friday afternoon beer parties."
Would employees feel comfortable e-mailing the CEO? "They'd be comfortable e-mailing the general manager of ESPN.com or the CEO of DIG, but I don't know how comfortable they'd be e-mailing [Disney CEO] Michael Eisner."

– Leslie Goff
lgoff@ix.netcom.com

ED YOURDON

The 'light' touch

LAST MONTH'S COLUMN on managing e-business projects provoked many e-mail queries from readers who asked if I could provide examples and additional details about so-called light project management methodologies. Perhaps the most popular today is XP, as explained by Kent Beck in his book *eXtreme Programming eXplained* (Addison-Wesley, 2000). Another is "adaptive software development," explained by James Highsmith in a book by the same name (Dorset House, 1999).

Most of the ideas behind light methodologies aren't new; indeed, Peter DeGrace and Leslie Hulet Stahl summarized many of the basic ideas in a wonderful book, *Wicked Problems, Righteous Solutions: A Catalog of Modern Software Engineering Paradigms* (Prentice Hall, 1990). While the emphasis in the '90s was on the iterative or "spiral" nature of these methodologies, the light characteristic involves something else. As University of Colorado Prof. Al Davis, who specializes in software requirements analysis, puts it, it really means "just enough."

A project management methodology that has too little discipline and rigor runs the risk of delivering the wrong system and being late and over budget. But a methodology burdened with too much detail, formality and bureaucracy risks becoming paralyzed in the face of rapid changes that take place during development. Neither extreme is practical today.

Thus, light methodologies represent a risk/reward approach to investing time, money and resources in the various phases and activities associated with systems development. How much is too much — or too little — requirements analysis? How much is too much formality and rigor in architectural design, code walk-throughs, testing and all the other familiar activities associated with software engineering? And how much is too much when it comes to time reporting, progress reporting, status meetings and the other familiar activities associated with managing a project?

How much is too much — or too little — requirements analysis?

The issues and questions have been with us since the beginning of the software industry, but the answers and strategies must be reexamined at least every few years, because the cost/benefit parameters change as business conditions, technology and our software developers change. For example, the choice between too much and too little rigor is likely to be affected by corporate time-to-market pressure. Is that pressure higher or lower than it was a decade ago, and are the penalties for not being first to market higher or lower? And employee turnover is a factor: One reason for having a formal software development process is that such a detailed document describing the requirements, design and code will make a project less chaotic if developers quit in the middle of it. Is that more or less likely to occur today?

As I discussed in my July column, "Rethinking Basics," the light methodologies also ask us to re-examine our assumptions about investing resources in requirements analysis — where the defects have traditionally been the most difficult and expensive to fix — and assumptions about investing resources in process improvement in those circumstances where we can associate a design-level or code-level defect with a faulty process. Again, the answer isn't likely to be an extreme of bureaucratic overkill or rampant anarchy but just enough rigor and discipline to provide a cost-effective benefit.

The popular light methodologies are also reintroducing collaboration among developers. In some cases, it takes the form of powerful groupware tools; in other cases, such as with XP, it even leads to "pair programming," in which two developers work together on a single design or coding assignment. This practice faded away a decade ago, when falling hardware costs made it cost-effective to give every developer his own development tools. But today, pair programming can lead to higher-quality systems and reduce the time spent testing and debugging.

Any IT organization involved in high-pressure, short-schedule e-business development projects needs to investigate light methodologies. At their core, they represent simple common sense. But as humorist Will Rogers once remarked, "Common sense isn't common." ◗

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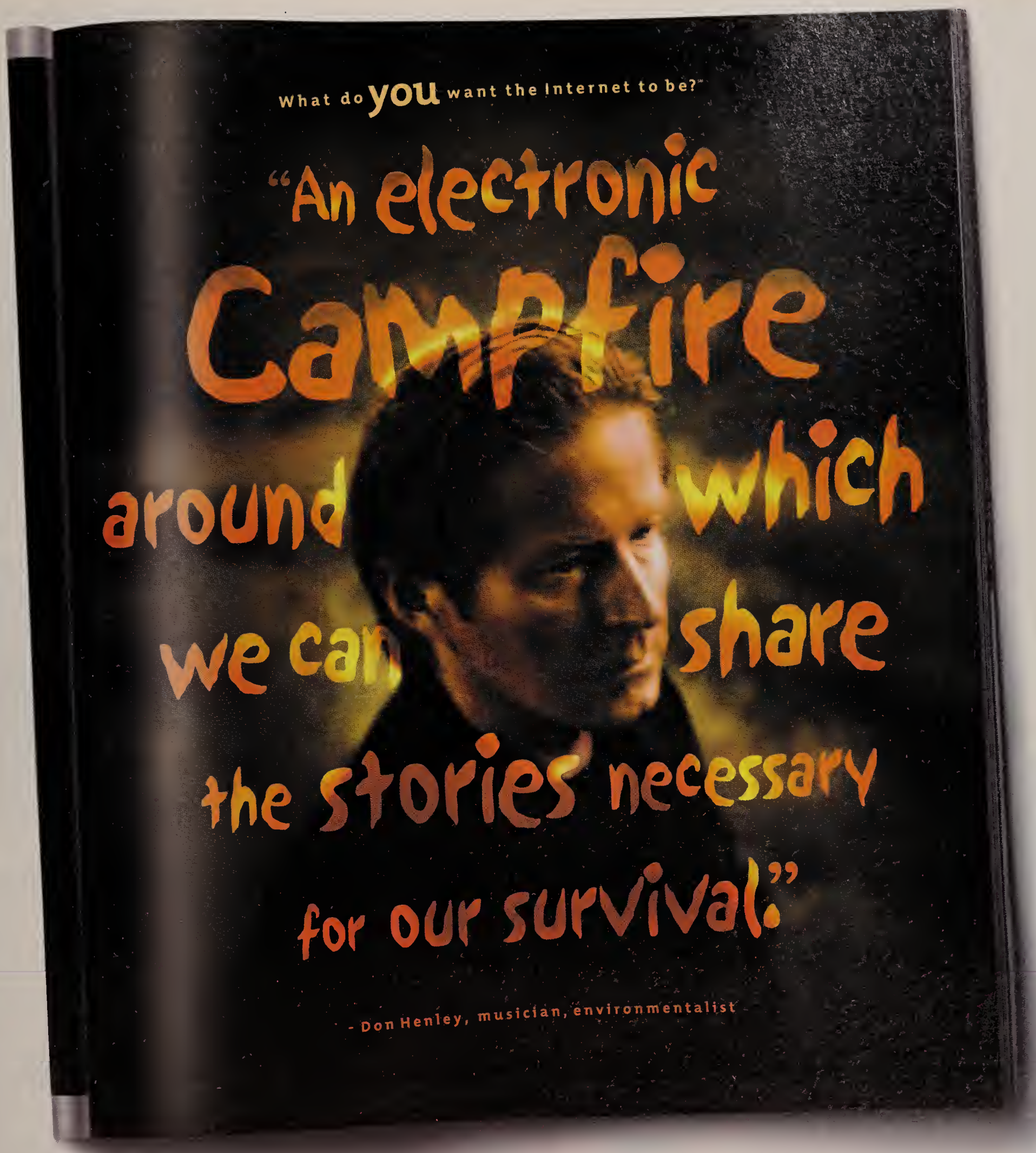

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TOP EXECUTIVE EDUCATION PROGRAMS

When it comes to executive education programs, IT managers look for colleges, conferences and consultants that offer training and insights they can put to work immediately. By Kathleen Melymuka

Leaders at Leadership

WHEN JIM MILLER was looking for some leadership training years ago, his human resources department suggested Otto Kroeger Associates in Fairfax, Va., which had a reputation for development courses based on the Myers-Briggs Type Indicator.

He says he caught up with Otto Kroeger after one of his classes, chatted a few minutes and was astonished when Kroeger asked him, "If your house has a light with switches in more than one spot, when you're leaving the house, do you ever go back to be sure not only that they're off but that both are in the down position as well?"

"Yes," Miller replied. "I've climbed a flight of stairs to do that on occasion."

"Then you could probably get something out of my course," Kroeger said.

That was Miller's first inkling that he might be a bit of a control freak. "It's amazing when someone can hold up a mirror like that to yourself, even if the truth is painful," laughs Miller, who has loosened up considerably and is currently vice president and CIO at Cerner Corp., a maker of health care systems in Kansas City, Mo. In Miller's case, the pain led to gain.

"Up until that point, my idea of managing was if I could get everyone to do it the way I did it, life would be really good," Miller recalls. "With Otto, the lightbulb went on: Not everyone looked at life and work and motivation the way I do. I ought to spend energy on understanding what will turn my people off and on rather than forcing people into things that don't fit."

Discovering educational experiences like the one Miller had is a CIO's dream. But there are plenty of nightmares to be had. In an effort to take some of the guesswork out of the quest, *Computerworld* surveyed 410 information technology leaders about what sings and what doesn't in executive education.

IT leaders want up-to-the-minute information that they can use right away, and most like to get it informally at conferences and meetings of associations.

"I've found them to be the most useful because they provide more state-of-the-art information," says Emily Gallup Fayen, who handles globalization at RoweCom Inc., a business-to-business service provider in Cambridge. Mass. "The presentations are usually by people actually working in the field where the latest things are happening. And especially in Internet commerce, it's all changing so fast that talking to people is almost the only way to find out what's happening now."

Huge symposia have their place, respondents say, as long as your expectations are realistic.

"I get a lot out of walking around Comdex," says Lawrence Mann, support services manager at Georgia Gulf Corp. in Baton Rouge, La. "If you go to try to locate the proper network card, you'll go crazy. But you can just get exposed to a lot of stuff and get the pulse of what's going on."

He says he attends Stamford, Conn.-based Garter Group Inc.'s Symposium/ITxpo for the same reason.

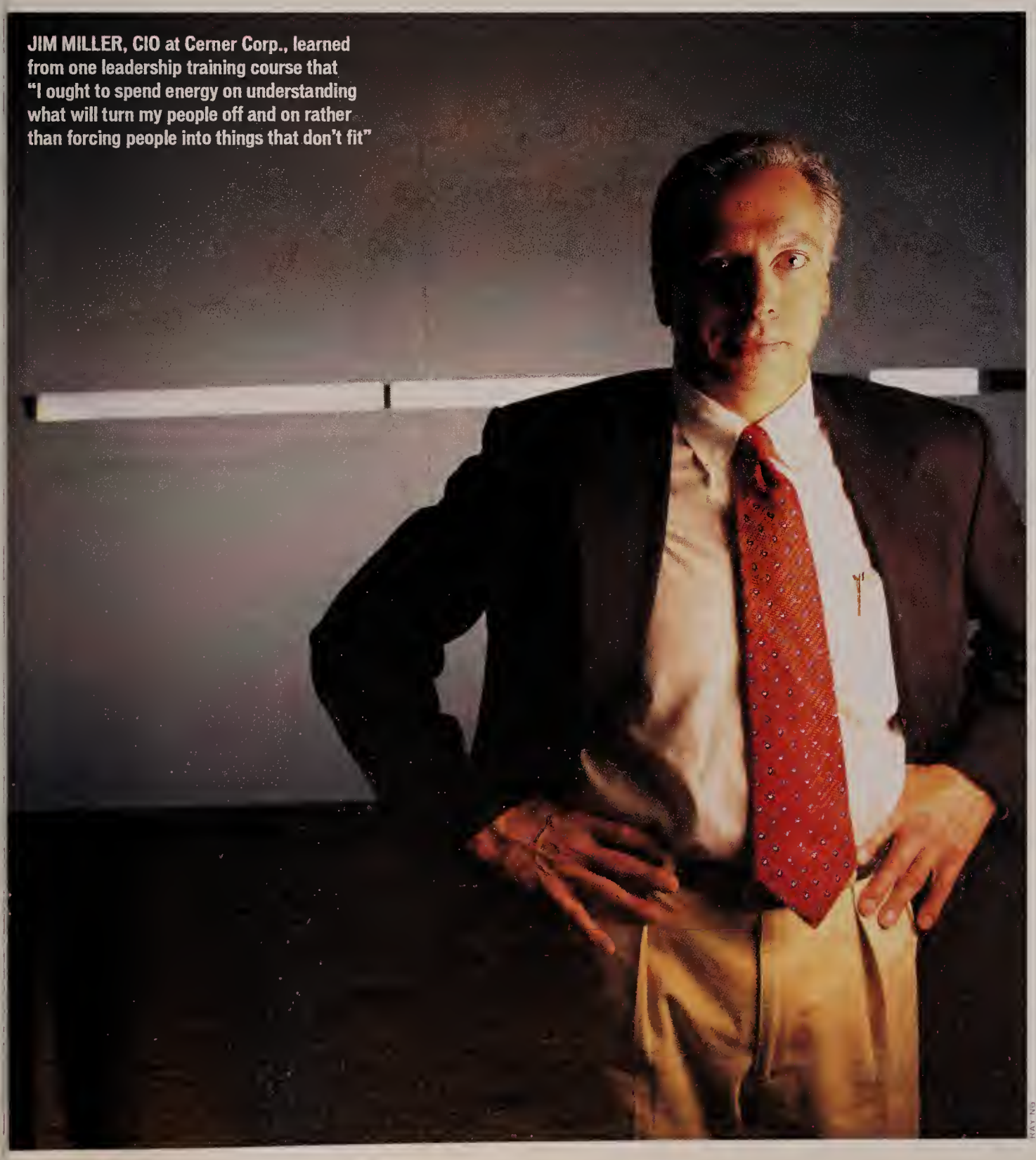
Others find the usefulness of conferences inversely proportional to their sizes. "If you've got 1,000 people in an auditorium, I get very little out of that," Miller says. "Usually, you'll get as much if you read a book."

In contrast, Miller says he found an AT&T Corp. executive development conference for about 30 CIOs very useful.

"They brought in speakers from around the industry and academia and tried to test the group's ability to get out of the box," Miller says. Most important, he says, is that participants can talk to presenters at breaks and meals, "so you can take the content of the session and dive down into it."

IT leaders stress that only part of the educational experience of a conference takes place at presentations. The rest happens "between the cracks," in the hallways, bars, restaurants, parties, vendor receptions and even bathrooms. Managers can help their

Continued on page 48



JIM MILLER, CIO at Cerner Corp., learned from one leadership training course that "I ought to spend energy on understanding what will turn my people off and on rather than forcing people into things that don't fit"

Executive Education Trends At a Glance

■ **Conferences are a primary resource.** Information technology executives are more inclined to send their staff to conferences for executive education, followed by professional associations, programs offered by graduate schools and corporate universities.

■ **Conferences have high corporate value.** In terms of effectiveness, IT executives indicated that conferences (30%) and professional associations (24%) were most effective in helping them achieve their companies' objectives, followed by graduate school executive education programs (17%) and customized corporate universities (16%).

■ **Management skills are in highest demand.** When asked what types of programs CIOs sent their staff to most often, the responses were management (25%), leadership (22%), communication (14%) and e-commerce (12%).

■ **Cost ranks high in making a selection.** The most important factors in selecting an executive education program were cost, length of program and level of customization.

■ **One week is an ideal length of time for training.** When asked what they considered to be a "reasonable" amount of class time for an executive education program, 55% said three to five business days, and 19% said fewer than three business days. Ten percent indicated that six to 10 business days was acceptable, and 7% said 11 to 28 days. Only 4% said that more than 28 business days was acceptable.

■ **Weekends are fair game for training.** Fifty-seven percent of survey respondents said they sent staff to programs on both weekend and business days, while 41% said they sent workers on business days only.

■ **A reasonable expectation for investment: $4,200.** On average, respondents indicated that $4,189 was a reasonable cost for a five-day executive education program.

■ **On-the-job performance is the best measure of success.** When asked how they measured the effectiveness of a program, IT executives frequently cited how a student applies what he learns to his job, retention of the information from the program and the results seen in the department overall.

■ **Internet training is used but with spotty success.** Approximately 54% of our survey base said their companies participated in Internet or video training. Of the 201 respondents who had used Internet training, roughly 41% said they were satisfied or extremely satisfied; 44% said they were somewhat satisfied and 14% were somewhat or not at all satisfied.

■ **Video training also gets mixed marks.** When asked how satisfied they were with video training, 42% of the CIOs said they were satisfied or extremely satisfied, and 40% indicated that they were somewhat satisfied. Seventeen percent said they were somewhat dissatisfied or not at all satisfied.

TOP EXECUTIVE EDUCATION PROGRAMS

Continued from page 47

reports get the most out of conferences by assuring them up front that socializing is an intrinsic and valuable part of the experience and isn't considered "goofing off."

"The more the conference attendees hang out with peers, the more they learn," says Cathy Hotka, vice president of IT at the National Retail Federation in Washington. "Your nightmare as a CIO is to send your people to a conference and have them eat dinner in their rooms."

Among professional associations, respondents praised the Information Management Forum as a place to meet and network with clients and competitors and hear about upcoming technologies and how they might be used.

IT leaders also had good things to say about short-term, university-based leadership courses from Harvard University, Stanford University, the University of California at Los Angeles and the University of Virginia, among others. They praised their reality-based case studies, close alignment with current issues, presenters with real-world experience, interaction with peers and action-oriented lessons.

Leadership and management educa-

Continued on page 50

Where We're Going

IT managers are most likely to send their staff to the following places for executive education:

30%	Conferences
24%	Professional associations
17%	Graduate schools
16%	Corporate universities (customized for the company)
8%	Four-year colleges
5%	Other (or not answered)

Who Does It Best?

Which institutions IT managers cited as most effective in achieving their company's executive education objectives:

27%	Conferences
23%	Professional associations
18%	Corporate universities (customized for the company)
18%	Graduate schools
6%	Four-year colleges
8%	Other (or not answered)

Executive Education: Made to Order

BY JILL VITIELLO

THE MOST EFFECTIVE executive education programs are the ones that are customized to a business's needs.

The e-commerce program PricewaterhouseCoopers developed with the top-rated Darden Graduate School of Business Administration is a powerful example of how customized executive education can have a substantial impact on an organization.

Last year, the company sent 3,000 executives back to school for an electronic-business education curriculum. By this year, the world's largest professional services firm had become one of the most sought-after management consultants for e-business strategy.

"We used executive education to spearhead an e-business transformation at PricewaterhouseCoopers," says Jim Sheegog, global leader of executive and organization development in Florham Park, N.J. "The information we rolled out to executives worldwide has quickly taken root in the firm and is showing up in new products currently being developed and launched."

To deliver this type of large-scale up-to-date learning, the financial services firm partnered with the Darden Graduate School at the University of Virginia in Charlottesville. The partnership's goal was to create a customized program specific to PricewaterhouseCoopers' needs.

The New York-based company wanted to create a widespread awareness of e-commerce among its executives and give them access to the most up-to-date learning on the topic. The curriculum was based on actual case studies and included sessions about online retail business models, manufacturing on the Web, online auctions and bids, Internet security and payment systems and Web metrics.

Darden is consistently ranked as one of the top business schools for its traditional MBA program. It's also renowned for its top-notch open enrollment and custom-designed executive education offerings.

"Darden is the second-largest writer of business cases in the world; the first is Harvard," says Dr. Brandt Allen, Darden's dean of executive education. "We hire faculty and promote them based in part on their special skills aimed at teaching executives and for their research directed at practicing managers rather than academics."

For those reasons, PricewaterhouseCoopers had already established a relationship with the school. When the global firm decided to offer an executive education course on e-business, Darden was the logical partner.

The first step was to create a team of corporate and academic members to staff the initiative. Next, Darden professors conducted research and wrote case studies of companies that were involved in e-commerce. Then they wrote curriculum for a three-day immersion into e-business.

The material was organized into modules for instructor-led classes of about 60 participants in each session. The course included breakouts for small groups that would review and analyze the case studies and lecture content, devise solutions and return to the classroom to make presentations.

PricewaterhouseCoopers employees contributed real-life experiences and access to clients and worked with Darden on the logistics of bringing 1,000 executives to the Charlottesville, Va., campus in June and August last year.

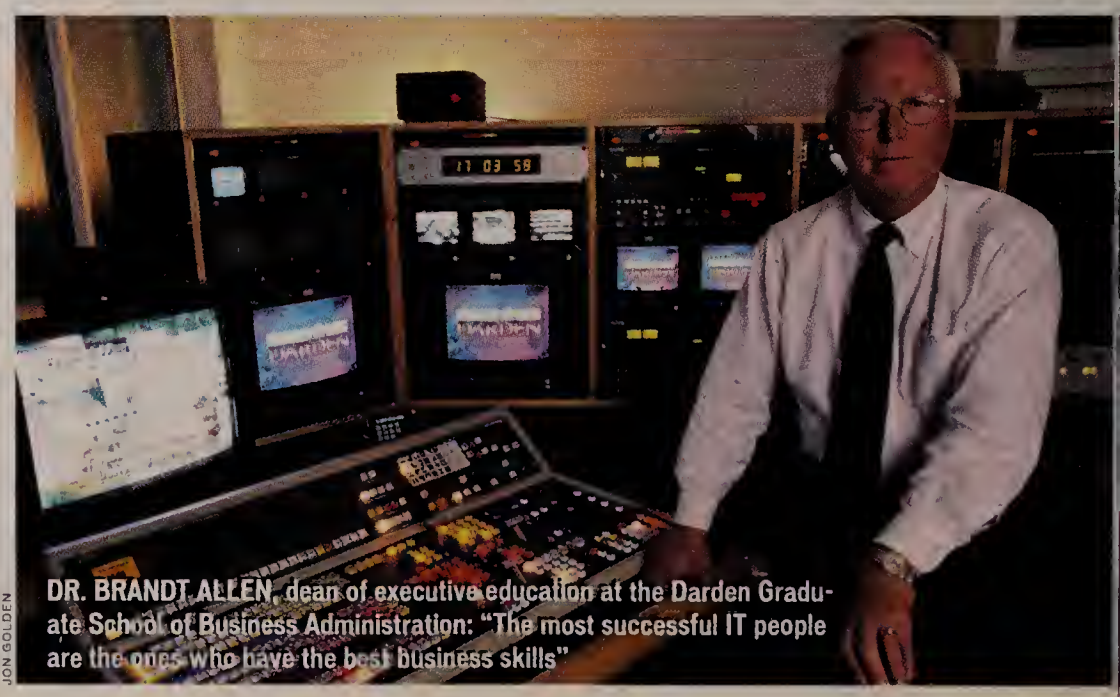
Not all PricewaterhouseCoopers executives traveled to Darden for the course. In a unique arrangement, Darden permitted five other internationally famous business schools to present Darden's copyrighted curriculum to another 2,000 executives around the world.

The consortium of schools included the London Business School, INSEAD (the European Institute of Business Administration), located just outside of Paris, the University of Melbourne in Australia, Carnegie Mellon University in Pittsburgh and the University of California at Los Angeles. According to Sheegog, the schools adapted the Darden curriculum and case studies to regional specifics to make the content more relevant.

Immediate Application

"A participant in an executive MBA program is amassing knowledge for later application, whereas our executives were applying the learning immediately while working with clients, even as the course was going on," says Ed Berryman, director of e-business solutions at PricewaterhouseCoopers, who assisted in creating the course.

Course participants delved into case



JON GOLDEN

DR. BRANDT ALLEN, dean of executive education at the Darden Graduate School of Business Administration: "The most successful IT people are the ones who have the best business skills"

How We're Choosing

The most important factors in choosing an executive education program, according to IT managers:

28%	Cost
27%	Length of time (time away from the office)
20%	Customization to fit the company's specific needs
18%	Teaching staff
7%	Other (or not answered)

Finding the Time

IT managers say a "reasonable" amount of time for an executive education program is:

55%	3 to 5 business days
19%	Fewer than 3 business days
10%	6 to 10 business days
7%	11 to 28 business days
5%	More than 28 business days
5%	Other (or no answer)

studies on organizations such as Dell Computer Corp., Value America Inc. and Progressive Casualty Insurance Co., examining how they use the Internet in their businesses.

During the session he attended, Len Steinmetz, a former technology leader for learning and education at PricewaterhouseCoopers who was recently promoted to IT management electronic-business practice leader, says the "trusty cell phones didn't stop ringing."

For executives who spend most of their waking hours at clients' locations, "the course was a significant amount of time to invest, but there is no fluff in it whatsoever, and it added significant value to everyone's portfolio of ideas," Steinmetz adds.

The best part was the "intense" case studies, presented as games and played by teams of participants, he says. Steinmetz says he enjoyed the competition (his team won) and the "hands-on application of the learning right in the class."

> The course is moving us to the forefront of the marketplace and helping create a common language.
>
> ED BERRYMAN, DIRECTOR OF E-BUSINESS SOLUTIONS, PRICEWATERHOUSECOOPERS

Clearly, attendees consider it time well spent. "We've seen a major acceleration of winning new e-business," says Berryman. "The course is moving us to the forefront of the marketplace and helping create a common language at PricewaterhouseCoopers."

"The course achieved three objectives," says Steinmetz. "It raised the level of awareness of e-business orientation for all new projects and their strategic direction. It provided business models for the new e-world. And the case studies helped us develop a depth of understanding about how firms have adapted or not adapted, what lessons they have learned and which best practices they use. The course helped us develop e-business strategy for PricewaterhouseCoopers and gave us a good additional basis for advising our clients."

According to Berryman, the course gave executives the rare opportunity to interact with their counterparts across different lines of business, such as auditors, tax accountants and management consultants, "to share perspectives about e-business opportunities."

In addition, a cybercafé gave executives and Darden students the chance to meet, share information about current projects and scope out new talent for the firm. Based on the ratings of the participants, "this is the most well-regarded course offered in recent memory," Berryman says.

Executives who come to Darden for open enrollment courses are those who "take responsibility for their own personal development," says Allen. "The most successful IT people are the ones who have the best business skills." ◗

Vitiello is a freelance writer in East Brunswick, N.J.

Reader Recommendations

The following are a few sources for executive education that IT managers told us they have attended or sent staffers to, and which they recommend. In all cases, these are programs, education centers or conferences that IT managers cited for their use of real-world examples in their curriculum for providing leadership and management training that can be immediately applied on the job or for providing excellent outlets for networking with their fellow IT executives or executives in training.

Colleges and University Programs

■ **Northwestern University**
J. L. Kellogg Graduate School of Management
Evanston, Ill.
www.kellogg.nwu.edu/exec_edu/index.htm

■ **Harvard University**
Graduate School of Business Administration
Boston
www.exed.hbs.edu/index.html

■ **MIT**
Sloan School of Management
Cambridge, Mass.
http://mitsloan.mit.edu/execed/main.html

■ **University of Michigan**
School of Business Administration
Ann Arbor, Mich.
http://execed.bus.umich.edu

■ **Stanford University**
Graduate School of Business
Stanford, Calif.
www.gsb.stanford.edu/exed

■ **Georgia Institute of Technology**
DuPree College of Management
Atlanta
www.dupree.gatech.edu/executive/exed.htm

■ **DeVry Institute of Technology**
Keller Graduate School of Management
Oakbrook Terrace, Ill.
www.keller.edu/cce.stm

Events, Associations and Organizations

■ **Premier 100 IT Leaders Conference**
Computerworld
Framingham, Mass.
www.computerworld.com/premier100/
No, this isn't an attempt at shameless self-promotion. Several IT managers recommended *Computerworld*'s first Premier 100 IT Leaders Conference as highly valuable. Next year's event will be held May 20-23 in Rancho Mirage, Calif.

■ **Gartner Symposium Expo**
Gartner Group Inc.
Stamford, Conn.
www.info-edge.com/sym99.htm
This year's event was held in April in San Diego. Details on next year's event are still pending.

■ **Information Management Forum**
Atlanta
www.infomgmtforum.com
Offers a series of conferences for IT executives, including ones on security (Sept. 25 in Atlanta) and knowledge management (Oct. 23-24 in Toronto).

■ **Educause**
Washington
www.educause.edu/conference/e2000/program.html
This year's conference will be held Oct. 10-13 in Nashville and is cited as the top conference for IT leadership issues on college and university campuses.

■ **Healthcare Information and Management Systems Society (HIMSS)**
Chicago
www.himss.org
Offers educational programs for CIOs and a popular annual conference. The 2001 Annual HIMSS Conference will be held Feb. 4-8 in New Orleans.

■ **American Management Association**
New York
www.amanet.org/events/calagend.htm
Offers an executive roundtable series, a corporate learning series and conferences and special events.

■ **Center for Creative Leadership**
Greensboro, N.C.
www.ccl.org/capabilities/aboutccl.htm
Offers leadership training at four campuses (three in the U.S.), as well as customized leadership training.

■ **Project Management Institute**
Newtown Square, Pa.
www.pmi.org
Offers a variety of project management training programs and a major project management conference, Connections 2000, which was held earlier this month in Houston.

■ **Stephen R. Covey *The 7 Habits of Highly Effective People***
www.alvest.com/growth/covey/index.html
Whether you read the book, buy the audio tape or sign up for a class, no single training program received such frequent praise from our readers as Covey's popular work.

Finding a Program That's Right For You

Most IT professionals receive forests' worth of training brochures. With so many choices, how do you select the best executive education program? We asked Tom Burg, vice president of mortgage systems at Bank United Corp. in Houston. Burg oversees the career development of his staff and attends executive education courses himself.

How do you select an executive education program for your IT department? Every week, I get a box full of advertisements about training programs. There's one easy way to cut through that clutter – word of mouth. Personal recommendations from respected colleagues are the best way to identify programs that will make a meaningful impact on my own organization. Bank United's CIO, Wayne Sadin, has recommended some very successful training programs for the IT staff and introduced me to the [American Management Association's] Executive Effectiveness course. I just returned from the first week of the two-session course, and I give it my glowing recommendation.

Which executive-level skills are you most interested in helping your IT staff to develop? Our goal in selecting any education opportunity for people at all levels in IT is to make sure that it addresses existing needs. For example, 25 of our IT leaders just concluded a two-day session on presentation skills. Because they are integrated directly into the business units they support, it's imperative for them to be able to communicate effectively with executives. The course was so helpful, we're extending it to include a half-day refresher for the leaders and a session on conflict resolution and negotiation skills for about 40 people in help desk and desktop support positions.

How do you select the employees who will attend executive education programs? I select employees based on their positions and level of responsibility. People who deal with executives or who are expected to carry out tactical programs and strategic initiatives generally are the ones I choose.

How do you measure the success of an executive education program? We've found that immediate feedback mechanisms are very helpful. When our IT staff members come through the communications training course, we'll look at metrics that tell us how we are resolving conflict, if we are able to mitigate it and how effectively IT people communicate with our business partners.

What advice can you offer other IT leaders searching for the best executive education programs? A good reason for going outside for training that involves professional development and personal growth is that the further up the executive ladder you climb, the fewer people there are to give you honest feedback. A good executive education program should provide opportunities for constructive criticism and improvement.

What We're Learning

What IT managers send their staff to executive education programs to study:

25%	Management
22%	Leadership
14%	Communication
12%	E-commerce
5%	Business/finance
4%	Business/marketing
4%	Recruitment/retention
4%	Business/supply chain
3%	Business/logistics
3%	Business/accounting
4%	Other (or not answered)

Learning From the Best

The most effective teachers for executive education programs, according to IT managers:

32%	Professional consultants
27%	Executives from other, external companies
17%	College or university professors and faculty
15%	Corporate trainers
8%	Their own company's internal executives and managers
1%	Other (or no answer)

The Role of the Net

IT managers rate their satisfaction with the Internet for delivering training as follows:

3%	Extremely satisfied
20%	Satisfied
24%	Somewhat satisfied
5%	Somewhat dissatisfied
3%	Not at all satisfied
45%	Not applicable or no answer

Methodology

Computerworld's Executive Education Survey was conducted July 25 through Aug. 3. Our survey was administered online to directors, vice presidents and CIOs in organizations across the U.S. Our survey asked which programs IT executives sent their staff to, what their criteria were for selecting programs, how they measured the effectiveness of a program and which programs were most valuable. A total of 410 IT managers responded to the survey. The organizations surveyed had an average of 8,832 employees.

Continued from page 48

tion is in greatest demand, but Fayen notes that programs fail if they're too general. "I just got back from one for everyone from first-line managers to senior executives," she says. "It's very hard to construct a management training program that will be appropriate to all of them."

Among programs focused on leadership training, The Center for Creative Leadership in Greensboro, N.C., got the nod from many companies for intensive, high-quality, content-rich programs. Miller says two of the center's sessions helped him modify his behavior to become a more effective leader.

"Their approach is to force you out of your comfort zone to learn about your behaviors, insights, motivation and communication style, with the intent that you learn how to modify your own behavior so you can become a more effective leader," Miller explains. "They show you that you're really dealing with people's emotions in addition to the content on the table."

This approach was a revelation for Miller. He says that like many IT professionals, his personal style is heavily skewed toward thinking rather than feeling. Becoming more aware of that "has been more helpful for me in my career than any content or skills training I've ever received," Miller says.

Vendors often sponsor educational opportunities, and several respondents praised IBM's sessions for being carefully tailored to specific audiences, with plenty of action items to take home.

A user group meeting can combine vendor know-how with user networking for a successful educational opportunity, says Don Williams, director of information management at Hutcheson Medical Center in Fort Oglethorpe, Ga.

The best thing about user meetings, Williams says, is that they focus on the issues that are keeping CIOs awake. For him, that's the new federal regulations regarding the portability of health care insurance and the privacy and security issues they raise.

"One of the things I expect to see at the user group is how we can realistically deal with these issues," Williams says.

How to Choose

IT leaders are barraged with pitches for education. Mann winnows them down by comparing opportunities with the gaps in his IT skills assessment database. When an employee attends a session, he adds information about the class and its usefulness into the skills database so that next time, prospective students can get insights in advance.

Many glean information the old-fashioned way. When Miller was looking for leadership training, he talked with peers in other IT shops.

"The Center for Creative Leadership came up a half-dozen times, and we got a good feel for it," Miller says. "I became the guinea pig and went first; then we scheduled 12 more folks over six or eight months."

"I look at the agenda," says Bruce Barnes, vice president for technology strategy and planning at Nationwide Mutual Insurance in Columbus, Ohio. "What are they intending to do? How specific is it? I look at the quality of presenters. Do I know them? I also try to assess how experienced they are in the space where the training is being focused. I want 'been there; got dirty.' I check the list of 'satisfied customers,' and if I know them, I call and say, 'What do you think?' "

IT executives measure the effectiveness of a program by results. Barnes takes notes during sessions about where to apply skills or information on the job.

Fayen says if she comes away with one useful thing, the training was worth it. She looks for new insights from employees.

Mann says a program was worth it "if it sticks with me. You can get a high off a program, but then a week later you say, 'What can I do with it?' Good ones teach me something I can use."

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The Latino population is the fastest-g remains the most underrepresented i unlikely to change if we keep looking

THE LATIN WORKFO

JORGE YACILA, A 10-YEAR VETERAN IN XEROX Corp.'s information technology department, says being a Latino and an IT professional in the U.S. can be an advantage. In fact, his ethnicity is what brought him to Xerox in the first place. "In the business world, [Hispanics] have enough common ties with language and heritage that it keeps us all together. We have enough common goals, so we can grow together and go forward," Yacila says.

Although Yacila and many other individual Latinos working in IT have grown in their careers together, Hispanics in the U.S. aren't well-represented among IT workers.

A few companies seeking technical talent have developed specific programs aimed at Latinos. But if IT is going to take advantage of the fastest-growing segment of the country's population, more training and recruitment efforts need to be directed toward Hispanics.

Xerox established its Hispanic College Liaison Program specifically to bring Hispanic men and women into the company. Yacila, whose family hails from Peru, was the president of the student chapter of the Society of Hispanic Professional Engineers at Polytechnic University in Brooklyn, N.Y.

Yacila had met regularly with Xerox representatives, who recruited heavily on the campus. They circulated his résumé inside the company, and he was offered a job before graduation.

Yacila has done everything from helping develop computer-aided engineering applications for product designers to deploying databases for the company's Latin American sales division. Now he's working in Xerox's critical worldwide data center in Rochester, N.Y.

But Yacila acknowledges that he's a rarity in the profession. Latinos "don't get much exposure to technology," he says, and that hurts in drawing their interest. But, he adds, "we have a civil responsibility to reach out to individuals who might need assistance."

Labor Gap Relief

Expanding Latino interest in technology could go a long way toward addressing the shortfall in technical personnel. It could also dramatically reduce the need to import IT talent into this country.

Richard Chabran, director of the Center for Virtual Research at the University of California, Riverside, acknowledges that H-1B visas are necessary for bringing foreign workers to the U.S. now and are important for the economy. "But more importantly, it is in our national interest to train people here. Visas are a short-term solution," he says.

On the face of it, the need for these visas seems likely to remain for a long time, if IT is to depend solely on higher education to fill the technical talent gap.

The Computer Research Association's most recent Taulbee Survey — which tracks ethnicity among college students majoring in computer science — shows Hispanics near the bottom among ethnic groups enrolled in computer science or computer engineering course work. The Washington-based association says that only 1% to 2% of all students who receive these technical degrees are Hispanic. The annual poll also showed that only 1% of computer science faculties are Latino.

This is a shocking disparity for a segment of the population that includes one of every nine U.S. citizens. According to the U.S. Census, there are more than 32 million Hispanic nonwhite members of society. The Latino population is growing at more than 35% per year, compared with the white majority,

owing segment of society, yet it the IT workforce. It's a scenario that's ffshore for talent. By Mark Hall

NO ORCE

LOURDES SORI, manager of infrastructure management at Florida Power & Light, says, "It's open communication, not just diversity, that counts" when employers try to recruit Latinos

MICHAEL PRICE

The Many Faces Of the Latino Workforce

Classifying individuals into a general group is always fraught with danger, especially given the cultural diversity among Latinos.

According to the U.S. Census, the Latino workforce (nonwhite Hispanic U.S. citizens) comprises the following nationalities:

Mexican	65.2%
Central/South American	14.3%
Puerto Rican	9.6%
Cuban	4.3%
Other	6.6%

"Nobody has an affinity about being Latino," says **Carlos Mendez**, who was vice president of Internet services at CommerceRoute Inc. in Emeryville, Calif., before being promoted to vice president of business development. Mendez says that if he were recruiting a Cuban, he would go about it differently than if he were seeking to hire a Mexican. "There are cultural differences that should be taken into account," he says.

Ana Babcock, a systems manager at FPL, agrees. "The term *Hispanic* is like a box all the different cultures have been put into," she says, adding that Asians face the same problem.

But Hispanic IT professionals both accept the term and understand that a common language is the reason they get lumped into a broader category than their own individual backgrounds.

Richard Chabran, director of the Center for Virtual Research at the University of California, Riverside, says that dwelling on the differences could set back efforts to develop a broader interest in IT among Latinos. "We need to get a general message out," he says.

While acknowledging "significant cultural differences," **Lourdes Sori**, manager of infrastructure management at FPL, suggests that IT recruiters not get bogged down in cultural differences. "What matters the most is not demographics as much as the socioeconomics of the group," she says.

Recruiters should also take a broader approach to reaching students, according to **Clara Chu**, professor of information studies at the University of California, Los Angeles. But, Chu adds, it's critical that universities and large IT organizations get to students early in their educations.

Chu suggests visits to high schools and even elementary schools to talk about what IT is and what IT workers do that's exciting. She said initiating workplace visits and even developing shadow programs will win over many Hispanic children to an IT career path.

– Mark Hall

which is expanding at only 3% per year. By 2005, Latinos will pass African-Americans as the second-most-populous ethnic group, behind the white majority.

Despite their strength in numbers, according to Bob Pearlman, executive director of San Jose-based JointVenture: Silicon Valley Network's 21st Century Education Initiative, "Latinos are just not finding their way into the IT scene." He says the workforce gap costs Silicon Valley companies between $3 billion and $4 billion because they can't get people to work in IT.

To the credit of technical recruiters at some companies, they haven't shied away from seeking technical staff directly among Latinos, according to LatPro.com Inc., a Plantation, Fla.-based recruiter for Spanish- and Portuguese-speaking Americans. This year, IT-oriented jobs jumped to 33% of the positions offered through LatPro, compared with 20% last year.

Diverse Approaches

Lourdes Sori, manager of infrastructure management at Florida Power & Light Co. (FPL) in Juno Beach, Fla., defies the statistical norm.

Born in Cuba, Sori came to the U.S. as a child in the 1960s. She earned a bachelor's degree in electrical engineering and then worked at Schaumburg, Ill.-based Motorola Inc. in wireless telecommunications engineering before getting her master's degree and moving to FPL's information management department.

Sori says IT departments that are seeking Hispanic employees need to foster an environment "where people are comfortable with all sorts of people. It's open communication, not just diversity, that counts."

Just more than 28% of FPL's 600 information management department staff are Hispanic, nearly matching the utility company's overall percentage of Hispanic employees, which is 29%.

Dennis Klinger, CIO at FPL, says his department doesn't do anything special to recruit Latinos. But once they are on board, he makes certain that they get mentors who are primarily based in their technical fields.

"But we try to find someone they can talk to," Klinger says. Often, that can be another Latino.

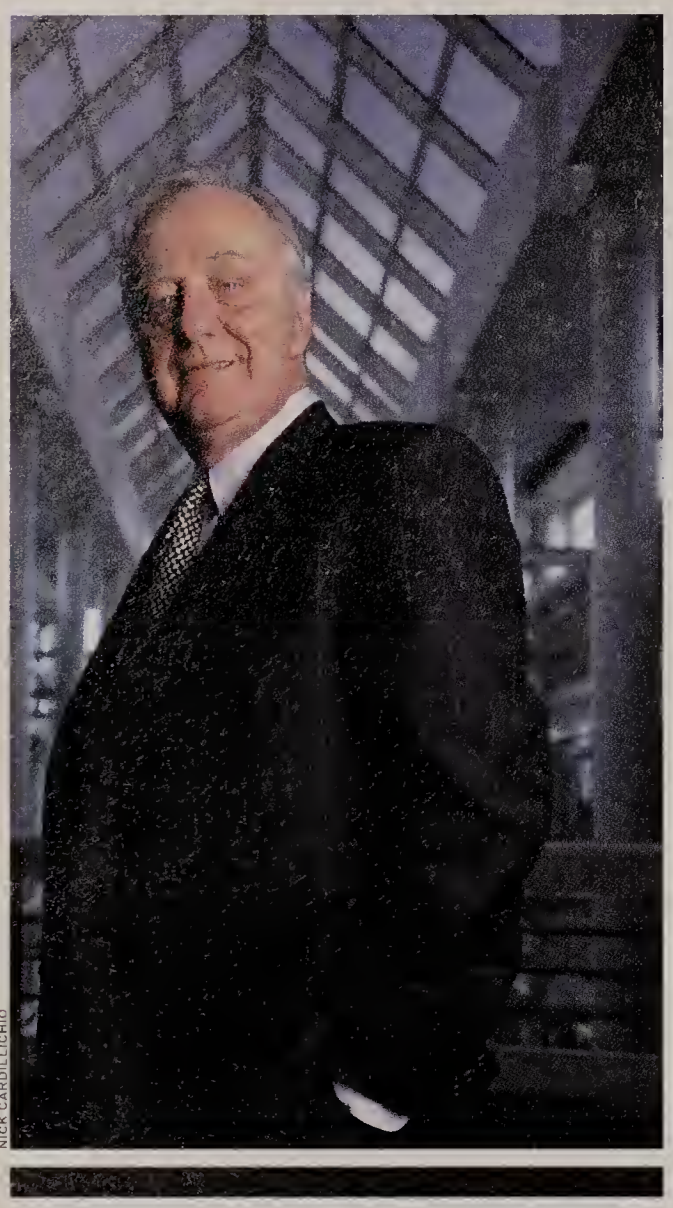
Xerox has taken an activist approach to recruiting minorities. In addition to the Hispanic College Liaison Program, the company has established internal caucus groups to represent demographic identities among its employees, including the Hispanic Association for Professional Advancement (HAPA).

The current president of Xerox's HAPA, Jeannete Arbulu, says, "It's very difficult to find Latinos in IT." Once they are hired at Xerox, however, they can use HAPA to identify mentors both inside and outside their departments to broaden their career opportunities within the company.

Arbulu, a U.S. citizen who was born in Ecuador, is working with a Latino mentor in Xerox's research and development group to deepen her technical knowledge. She says HAPA's primary goal is to develop Hispanic employees' knowledge for specific corporate business objectives. Given the company's policy to not sponsor H-1Bs, this puts significant pressure on its caucus groups to attract talent.

George Carranza, a manager at Xerox's office business unit, says the programs are a success, as far as he's concerned.

"My hiring at Xerox is a direct result of the efforts of HAPA," Carranza says, recalling the company's recruitment activities among technology-savvy Latino students at California State University, Fullerton.



NICK CARDILLICHIO

WHO IS HE?

William D. Friel, 61, joined Prudential Insurance Company of America in 1988 as vice president of information systems and was tapped to become the company's first CIO in 1995. Friel has 40 years of information technology experience under his belt, having worked at Automatic Data Processing Inc. and J. C. Penney before joining Prudential. Within the past year, he was named by *Network World* as one of the "25 Most Powerful People in Networking" and described as one of the most successful CIOs in the insurance industry by *Insurance and Technology Magazine*.

How to Be A Media Star

Look around you — techies are no longer in the shadows. These days, your former Dungeons & Dragons buddies are showing up on the cover of The New York Times *and chatting about their latest projects on* CNN.

Technology professionals are fast becoming media stars. But none of your computer science classes taught you how to talk to reporters without being misquoted or how to conduct a TV interview and come out looking more like JFK than Richard Nixon.

William D. Friel, senior vice president and CIO at Newark, N.J.-based Prudential Insurance Company of America, has seen it all.

With 40 years in information technology under his belt and regular interviews with the likes of The New York Times, The Wall Street Journal, CBS Network News *and, of course,* Computerworld, *Friel has learned some tips along the way.*

In a recent interview with Computerworld's **Melissa Solomon**, *Friel offers advice on how CIOs can be effective — and visible — spokesmen for their companies.*

What have been some pros and cons of working with the media, both personally and organizationally? I think as far as working with the media is concerned, that is part of my job. I do enjoy being able to describe what Prudential has done, what impact it's had, how it's helped our customers. . . . And I think it helps us retain the best and the brightest in the industry, as well as attract the best and the brightest. And not just the developers; the business partners are reading about us as well, and it's something they feel good about.

How do you juggle the need to act as a spokesman with the need to get your work done? I consider it part of my job . . . and I will try to be as accommodating as possible. The most difficult situation, of course, is when someone has a deadline and they need to have a comment today. If possible, if we can accommodate them, it's a subject I know very well, I'd be happy to do it. But there are times we have to miss some of those opportunities.

What were your earliest interviews like? Twenty-five, 30 years ago, I felt concerned about talking with the press. Was I going to get my message across appropriately? Was I an effective communicator? Was the person doing the interview an effective listener, so that they understood what I was saying and would [that person] convey the message appropriately?

Have you seen a difference in the way you give interviews over the years? Yes. I think first of all, there's the preparatory work that's done by the organization to identify what the reporter is interested in, so that you get a chance to think about it. The more of that's done, the easier it is and I think the more productive it is, both for me as well as for the press. The most difficult kinds of interviews are interviews where you had no notion of what was on the mind of the interviewer.

Obviously, a lot has changed in technology since you began 40 years ago. Have those changes brought about differences in the dynamics of interviews? Technology is moving so rapidly and there's so much of an accelerated pace of new technologies, new products, new services that it is extremely difficult to keep up with everything that is going on. . . . So that's really one of the good reasons why you need to have some idea in advance of what the interviewer is interested in.

When I first started in computing in 1960, computing was primarily a back-office kind of activity. Now . . . it's involved in directly touching the customer and understanding the customer. . . . So, it's quite a different world, and it's a heck of a lot more interesting world. It's a much broader, more complex set of questions and areas that are being covered, and in that sense, it's more demanding.

Have you ever committed any serious blunders in an interview? We make it a policy and it's just good, common sense not to talk negatively about products and services offered in the marketplace. And when once or twice that has happened, [our public relations staff or I] would jump in and say, "We don't expect to see that in the interview because that wasn't the purpose." . . . We're not interested in casting stones at other people's products or services.

Have you learned any tips to ensure you get your message across? I would tend to be as honest and open as possible.

Have you ever had a conversation with a reporter without realizing you were on the record? No, because outside of those times as I said earlier where I've made a blunder or two, I try to stay away from that. It's kind of a result of the media education. We don't really expect to be off the record. And I never would offer, "Hey, I'm going to give you this, but it's not for attribution, so you can do with it what you want." I don't operate that way.

What are some of the areas covered in Prudential's media training for employees? An understanding of what drives the interviewer and what the role of a reporter is and what the role as a spokesman of Prudential is. . . . Very often, it's quite different than just having a conversation with somebody on the street corner or in your office. And there just needs to be a heightened awareness and recognition of that.

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Online Profiling

DEFINITION

Online profiling involves collecting and analyzing customer Web site data — information that can be used to personalize and customize an end user's Web experience. Network advertisers use online profiles to track end users across multiple Web sites. The practice is controversial and may ultimately be subject to federal regulation.

BY PATRICK THIBODEAU

A CARDINAL RULE for any successful business is to "know your customer." In e-commerce, a key way for companies to get information about their customers is through online profiling.

Online profiling data, which is information gleaned from a customer's use of a Web site, can be used to target advertisements, personalize Web sites and match services to a specific customer's needs.

But the practice of online profiling has come under intense scrutiny. Many lawmakers and privacy advocates say they're concerned that online profiling can be used to learn a customer's political and religious views, sexual orientation or medical conditions — information that can be sold and shared in a networked world.

In short, online profiling embodies both the promise and the perils of e-commerce. But, analysts say, one thing is certain: The practice is indispensable to any Web business.

Know Your Customer

"You have to do it if you are an online business. It's the critical element for evaluating the effectiveness of your site," says Chris Christiansen, an analyst at International Data Corp. in Framingham, Mass.

Online profiling begins once the host computer — the Web site being visited — places a "cookie" on the end user's computer. The cookie, which is a unique identifier, then transmits information back to the host computer. This information allows a business to track an end user's page views, the length and time of the visit and responses to advertisements. Purchases and search terms entered by the end user can also be tracked.

Companies can develop sophisticated profiles of their end users through personalization software.

This information can help customers use their time efficiently. For instance, officials at Saleoutlet.com Inc. say they know that the average visitor spends about nine minutes at the company's Web site.

"But is that nine minutes spent looking, getting frustrated, or is that nine minutes spent looking for things that they want to buy and research?" asks Michael Aronowitz, president of the New York-based company.

Saleoutlet.com uses personalization software developed by Wellesley, Mass.-based Manna Inc. to dynamically change content based on information about users. The information is gained through an analysis of clickstream data combined with demographic and psychographic data, which looks at the behavior of other end users.

This data can be used to anticipate a customer's actions. For instance, if it looks like a customer may abandon a shopping cart because of the particularly high shipping cost of a product, and if other customers have shown a pattern of doing the same thing with the same product, the Web site may provide an incentive, such as a discount, to buy the item.

Proceed With Caution

Experts advise businesses to be up front with their customers about their online profiling practices.

"The best thing you can do is build trust with your customers — tell them what you are doing with the information and why, and don't sell or trade information and try not to buy information," says Eric Schmitt, an analyst at Forrester Research Inc. in Cambridge, Mass.

The practice of online profiling becomes particularly controversial when end users are tracked over multiple Web sites by network advertisers.

A banner advertisement, when downloaded from a network advertiser's server, places a cookie on an end user's computer. That user can then be tracked across Web sites that have agreements with the network advertisers.

The Web-browsing data is anonymous as long as the network advertiser doesn't link it with personally identifiable information.

Privacy advocates say they fear that if advertisers begin doing that, not only could companies develop profiles of customers' Web-browsing habits, but the data could also be coupled with off-line databases, such as credit and court records or employment histories.

But network advertisers risk a public backlash if they link personally identifiable information with Web-browsing habits, as industry leader DoubleClick Inc. found out. Last March, the New York-based company dropped its plans to link people with Web-browsing habits after receiving considerable public criticism.

Network advertisers can develop customer profiles by collecting anonymous data that may also include some basic information, such as the sex and age of an end user. This information can be acquired through agreements between network advertisers and online businesses.

If the advertiser has information about a group of Web site visitors, such as their sexes and ages, they can apply statistical sampling techniques to browsing data.

But some observers, such as Jordan Rosner, director of new media marketing at Pfizer Pharmaceuticals Group in New York, say they wonder if online network-advertising profiling data can really deliver good customer information.

"When you really get into a good conversation [with network advertisers], you realize that they only know a small amount of information" about their Web audience, says Rosner. A lot of information that's used to compile profiles "is just statistical projections, and it's not really based on hard facts or data about individuals," he says.

> The best thing you can do is build trust with your customers — tell them what you are doing.
>
> ERIC SCHMITT, ANALYST, FORRESTER RESEARCH INC.

The pressure is on for better online profiling data that businesses can use in targeting advertisements and serving customers. Without personally identifiable information, companies can't respond to individual customers who visit their Web sites.

"It's as if someone is standing in front of you with a paper bag over their head," says Schmitt. ◗

Self-Regulated Profiling

Fearing government regulation, a consortium of nine network advertisers that collectively own 90% of the market are attempting to forestall privacy legislation through their recent adoption of self-regulatory guidelines. In new contracts that will be issued to Web sites by network advertisers such as market leader DoubleClick, specific terms will be set on how companies may accomplish online profiling.

For instance, Web sites that have agreements with network advertisers will have to obtain consumer consent to conduct online profiling. "Robust" notice and consent will be required before personally identifiable information can be merged with Web-browsing data. The guidelines also prohibit the use of sensitive personally identifiable information, such as medical or financial data, in online profiling. But the future is in a state of flux. Congress is considering numerous bills concerning online profiling, and it may well become a major issue in the U.S. presidential campaign.

– Patrick Thibodeau

■ *Are there business terms you would like to learn about in QuickStudy? Please send your ideas to quickstudy@computerworld.com.*

JOE AUER/DRIVING THE DEAL

'Good cop, bad cop' brings customer justice

AN E-MAIL FROM Tokyo told me about a negotiations tactic we use frequently in the West and about how effective it can be in the Far East — even in seemingly hopeless situations.

First, some background.

Two customer procurement professionals, Peter and Ben, had heard me speak in Tokyo at a "How to Do Better Deals" seminar the day before they met with a software supplier. The customer's end user himself told supplier's sales director was that he needed the software. (Ouch.) The end user also told Peter and Ben that the vendor wasn't going to budge on price, that the deal was essentially done and that he had told the vendor it just had to go through the motions with the procurement department. (Wow, what a challenge for the procurement guys.)

Here's how Peter described his and Ben's winning strategy:

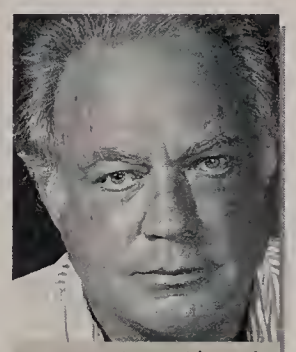
"Ben played 'bad cop'; I played 'good cop' and was able to give a sympathetic ear to the supplier when Ben walked out of the room seeming real upset at the vendor's lack of give-and-take. We heard a strong 'no' to our price discount request. We were told to 'take it or leave it' as well.

"The vendor played like he was throwing us a bone when he finally offered a 5% discount. Ben insisted on 15% (aiming for 10%). The vendor acted like he wasn't used to this and appeared extremely uncomfortable. Ben left the room for a breather while I talked about the model of give-and-take and partnership we're used to in dealing with our vendors, using a very consoling and diplomatic tone. I had his full attention when I asked if he'd consider making things easier for everyone. Less than 10 seconds after Ben's re-entrance, we got an immediate concession of 10% off the rock-bottom price quoted before."

There are two great points in this story. The first I've addressed before in this column: All of a customer's stakeholders must be on the same team. Everyone must be aware that negotiations begin from the moment a vendor first talks to an information technology user, continuing all the way through to the ink drying on the contract and through the duration of the contract, until it expires. Negotiations training for all staffers who have any contact with vendors is crucial to getting a better deal and then managing the deal better.

The second point in this story is hearing the word "no."

I have often said that unless you have heard it several times from a vendor, you're not asking for enough — and you're leaving something on the table for sure. Peter and Ben once again proved that even a "take it or leave it" statement from a vendor isn't always the final answer — especially with these two "cops" doing their thing on the beat in Tokyo.



JOE AUER is president of International Computer Negotiations Inc. (*www.dobetterdeals.com*), a Winter Park, Fla., consultancy that educates users on high-tech procurement. ICN sponsors CAUCUS: The Association of High Tech Acquisition Professionals. Contact him at **joea@dobetterdeals.com**.

The Alligator Strategy

Dave, an esteemed colleague, just returned from vacation and reported that he spent his time off fishing, relaxing and watching birds and alligators.

Dave said: "Every day I'd see the same 10-foot alligator lying on the bank or in the water at the edge of the lake. He'd pick his spot, lie there and wait — and observe. Suddenly, in a flurry of activity, a bird would disappear. The gator always waited until the precise moment he knew he could make the kill. He never missed."

Dave went on: "It dawned on me that the alligator's strategy is very useful when negotiating. He was calm, persistent and waited for the right moment, and when he made his point, it was perfectly clear (especially to the bird). I've believed for a long time that these traits are required to be a successful negotiator.

"Successful negotiations require that you never lose patience, pick your spot, wait and observe, stay focused on successful resolution of issues and always make your point perfectly clear to avoid miscommunication. Of course, it's not recommended that you 'kill' your opponent, but clear and effective communication at the right moment is a very powerful tool." ◗

BRIEFS

Survey: Security No. 1 E-Business Priority

In a recent survey conducted by Cutter Consortium in Arlington, Mass., privacy ranked near the bottom on a list of important issues facing organizations engaged in electronic business. Respondents picked security as their first choice, followed by cost, reliability, user connection speed, lack of standards, privacy and backbone. Of the 134 companies surveyed, only 53% have a formal privacy policy. Among those that do, however, privacy is taken seriously: 73% of then said they use customer data for internal use only, and 17% said they don't keep data. Only 9% said they share data with carefully selected, screened parties.

USG Turns to ASP for Expense Tracking

Building materials giant USG Corp. in Chicago has chosen Concur Technologies Inc.'s hosted travel- and expense-reporting application. According to USG, it will use the Redmond, Wash.-based application service provider's software to replace its paper-based travel- and expense-tracking process. USG said it expects to cut both operational and travel costs using the product.

Sprint Leveraging Wireless Knowledge

Wireless Knowledge Inc. in San Diego said last week that Sprint Corp.'s wireless unit has deployed the Wireless Knowledge Workstyle Server to allow Sprint's sales force and other workers to exchange e-mail and calendar and contact information wirelessly. Wireless Knowledge, a joint venture of Qualcomm Inc. in San Diego and Microsoft Corp., announced in July the third version of its server, which allows real-time access to Microsoft Exchange 5.5 corporate e-mail. The servers are installed behind the company's firewall.

Ericsson, Microsoft Team for Production

L. M. Ericsson Telephone Co. and Microsoft Corp. announced a joint venture last week to build and market mobile e-mail products made available through wireless carriers for consumers and corporate customers. Ericsson Microsoft Mobile Venture AB in Stockholm will have regional centers around the world. The products will integrate the Windows 2000 server and exchange platforms with Ericsson infrastructure and wireless Internet phones and other devices. The two companies are dedicated to jointly supporting open standards and newer technologies such as Bluetooth, Wireless Application Protocol and Universal Plug and Play.

SNAPSHOT

Reading Up

Aside from their CIOs' advice, corporate CEOs rely mostly on professional reading materials to gain insight about information technology, according to a recent survey conducted by Transition Partners Co., a Reston, Va.-based consulting firm. When asked where they turn for advice, CEOs cited the following:

▸Professional reading materials	77.1%
▸Industry peers	70.8%
▸Other business unit heads	54.2%
▸Gut instinct	22.9%
▸Interaction with social peers	18.8%
▸Other	10.4%

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TECHNOLOGY

NEW CHIP FROM SUN

Sun Microsystems last week launched its latest microprocessor, the UltraSPARC IIe, a 64-bit chip designed as a low-cost model for high-end storage systems and applications used by telecommunications companies and Internet service providers. ▸ 60

IBM HITS MARKET WITH HAMMER

IBM has launched Blue Hammer, a new system for clustering Web-based servers that uses the company's Parallel System Support Programs to bring together as many as 16 of the company's RS/6000 S80 Unix servers. The company's aim is to get a jump in the enterprise server space. ▸ 60

SECURITY JOURNAL

Security manager "Jude Thaddeus" gains new respect for the desktop support staff after trying to work with a major client who insists on using PGP encryption. The brouhaha takes him away from a key project — developing a prototype for a smart-card-based system to enable single sign-ons for users. ▸ 62

EXEC TECH

The Digital Wallet is 6GB of plug-and-play external storage that also reads compact flash cards from digital cameras. Just don't sit down if you're carrying it in your back pocket. ▸ 64

IMPOSING ORDER ON DESKTOPS

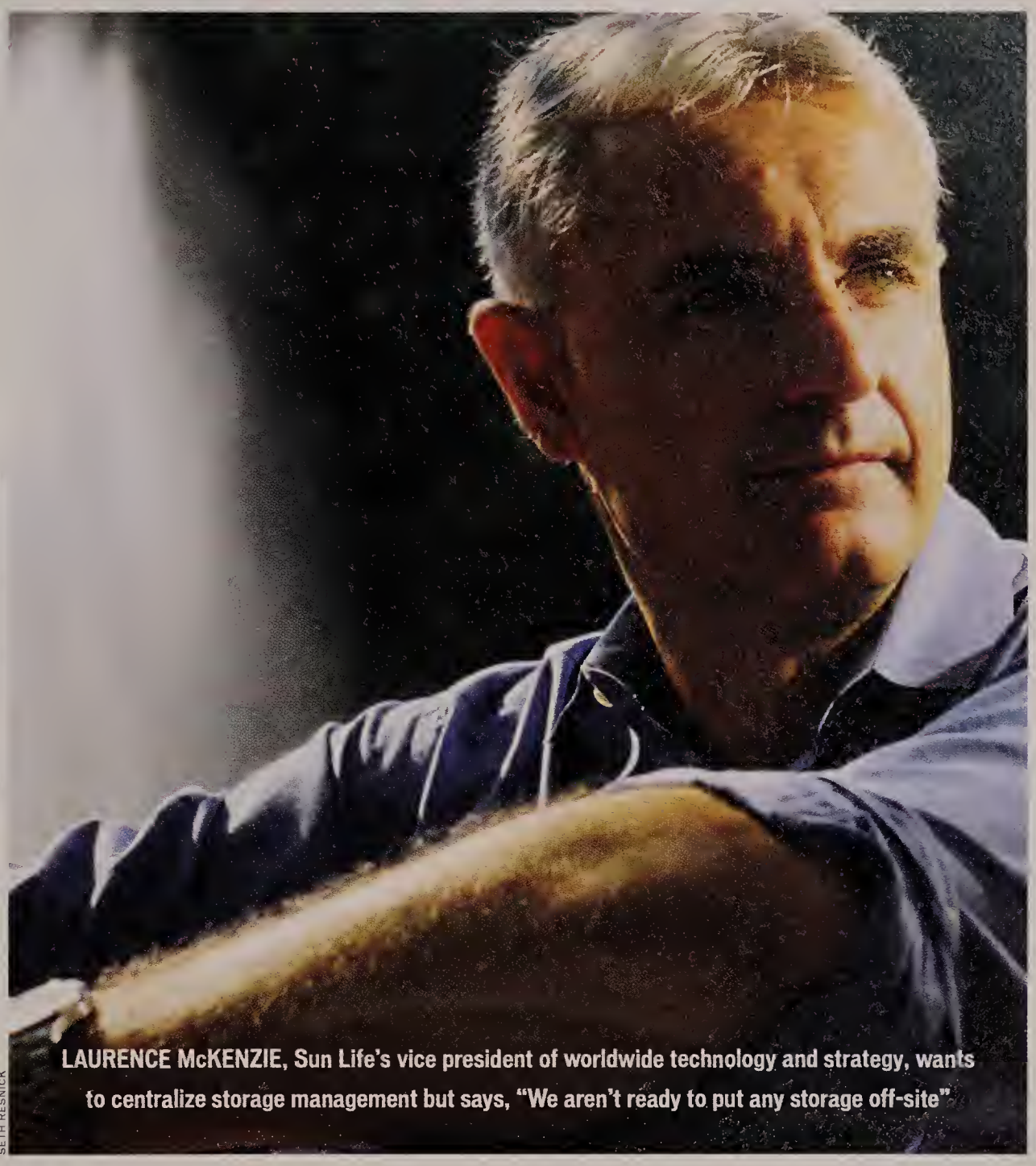
Desktop management suites are the Swiss Army knives of management tools. They monitor systems, automate software distribution, track licenses, manage hardware inventories and facilitate remote technical support. New standards have made the tools more interoperable than ever. But some users say they still don't integrate as well as they could with other enterprise management software and support for mobile users is limited. ▸ 68

QUICKSTUDY

An Easter Egg may be as simple as a message hidden in the object code of a program that's meant to be discovered by people disassembling or browsing the code. More often, it's a graphic or sound effect produced by a program that's intended either as a joke or to display program credits. ▸ 74

EMERGING COMPANIES

Start-up NetMorf's SiteMorfer media server software lets information technology managers extend e-commerce Web sites to mobile users and customize applications for mobile devices. Its application server uses XML to interact with back-end databases and mobile devices — an attractive feature for Web site managers. But with IBM in the market, will large companies sign on with NetMorf? ▸ 76



SETH RESNICK

LAURENCE McKENZIE, Sun Life's vice president of worldwide technology and strategy, wants to centralize storage management but says, "We aren't ready to put any storage off-site"

KEEPING DATA CLOSE TO HOME

Large companies are exploring the variety of storage options available but are wary of trusting mission-critical data to outsourcers. Many IT professionals at those companies say they can do a better job managing storage for bread-and-butter applications than a third party can. And they say they don't want to give up the control and security of on-site storage.

72

Sun Unveils Low-End UltraSPARC Chip

Processor targeted at telecoms, storage applications, Internet service providers

BY MICHAEL MEEHAN

SUN MICROSYSTEMS Inc. last week made available its latest microprocessor, the UltraSPARC IIe. The chip is the low-cost version of Sun's 64-bit processor line.

The IIe is targeted to work in the high-bandwidth, quick-throughput realms of telecommunications, storage-area networks and Internet service providers, company officials said. Unanswered are questions of whether Sun can use the cheaper, embedded chip to drive the cost of its systems low enough to satisfy users.

The IIe will be available in 400- and 500-MHz versions at a cost of $145 to $225 for manufacturers, said Jeff Guerrero, Sun's product-line manager for its processors.

The IIe comes as a single chip with a 256KB Level 2 cache, a 32-bit, 66-MHz Peripheral Component Interconnect bus and a synchronous dynamic RAM controller and memory interface. Alameda, Calif.-based Wind River Systems Inc.'s VxWorks and Sun's Solaris will be the first platforms to support the IIe.

The long-awaited 600-MHz UltraSPARC III is set for release before year's end. Many analysts expected the chip as early as 1998, but Neil MacDonald, vice president and research director at Gartner Group Inc. in Stamford, Conn., forecast a release for workstations by the end of this month.

Sun hasn't set a release date, but Guerrero confirmed that the UltraSPARC III has passed internal tests on Sun systems.

MacDonald said it will take about 18 months for the new generation of chips to prove their worth on high-volume, mission-critical systems.

"Buyers need to be careful with the II series," MacDonald said. "We view this as a 24-month tactical investment. After that, you're probably going to want another processor."

Alex Zoghlin, chief technical officer at Orbitz — a travel Web site set for launch next year and funded by the nation's largest airlines — said price is a key issue for his company.

"We're using a gigantic Sun infrastructure, probably one of the biggest on the Internet by the time we're done," he said. "But for our high CPU functions, I have 150 Intel machines for number crunching."

Zoghlin said he can use Linux and Intel Corp. machines to get much better performance for the same price. Ideally, he said, it would be nice to use the same platform to run the complex back-office functions he's put on Solaris machines and the high-volume transaction load of his reservations unit.

"We're taking a wait-and-see approach with this release," he said. "It's definitely the right direction, but they're definitely going to have to become more aggressive on the price in order to win people over."

Guerrero said Sun plans continual upgrades for its reseller-available chips. A 600-MHz version of the UltraSPARC IIi will be released next year, and 800- and 900-MHz versions of the IIe will hit the market before the end of 2001. Guerrero said that by 2003, Sun intends to have all its processors working at 2 GHz. ◗

JUST THE FACTS

Economy Features

Last week, Sun Microsystems unveiled what will be the economy model in its microprocessor line. The 64-bit chip is called the UltraSPARC IIe and has the following features:

- **400- and 500-MHz versions, with plans to double the speeds by the end of next year**
- **A 256KB Level 2 cache**
- **An integrated 32-bit, 66-MHz PCI bus**
- **An SDRAM controller and memory interface**

IBM's 'Blue Hammer' Takes on Sun, HP

BY LINDA ROSENCRANCE

In an effort to outdistance Sun Microsystems Inc. and Hewlett-Packard Co., its competitors in the Web server market, IBM has unveiled Blue Hammer, a system for clustering Web-based servers. Blue Hammer uses IBM's Parallel System Support Programs (PSSP) to cluster as many as 16 of the company's RS/6000 S80 Unix servers, according to IBM.

The system uses PSSP to enable e-commerce firms to simultaneously manage all the S80 servers in the cluster from a single point of control, the company said.

Blue Hammer is already being used by the Virginia Community College System to build its student information database. The Richmond, Va.-based system covers 23 colleges and 39 campuses — 250,000 credit students and 100,000 noncredit students.

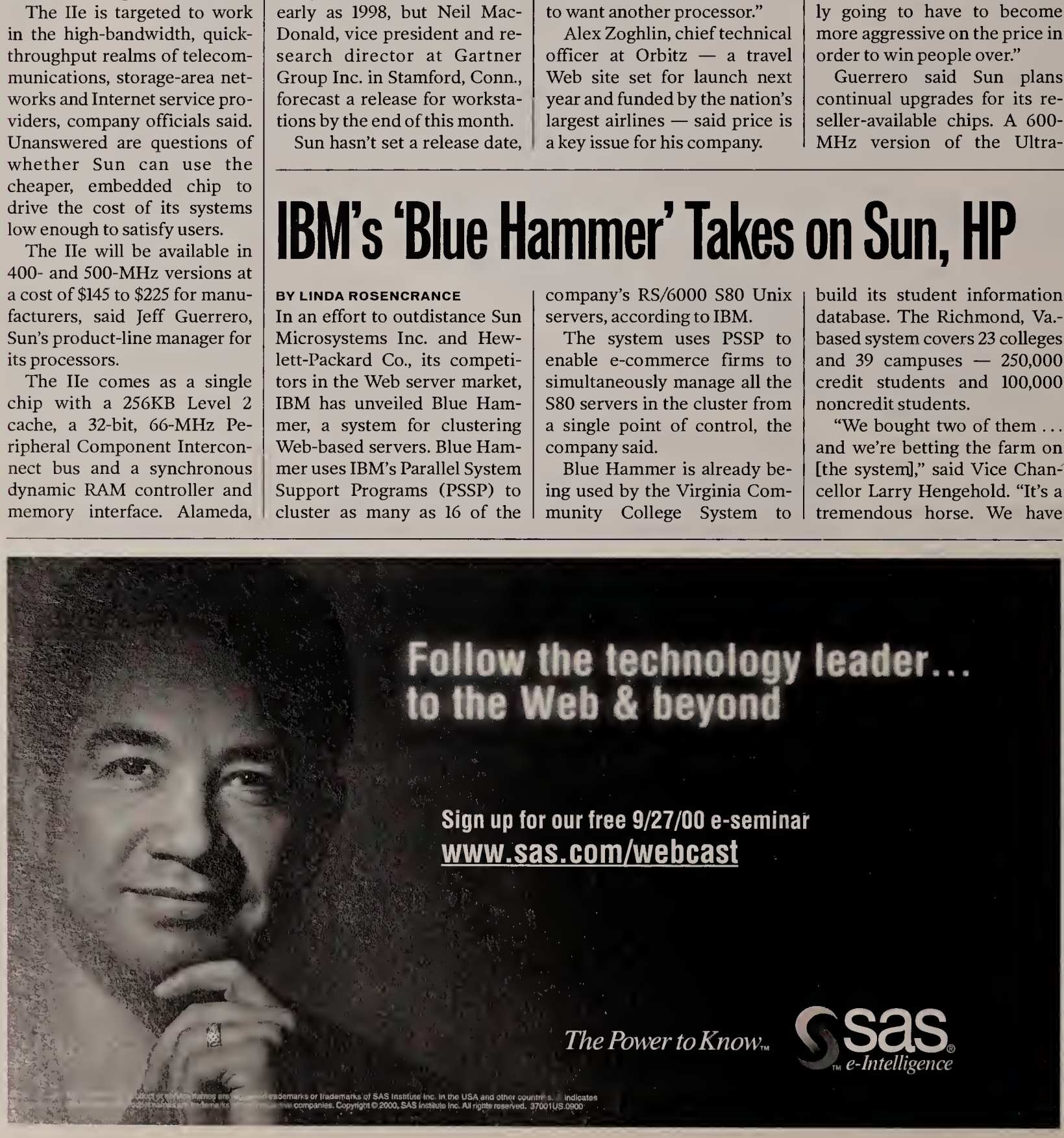
"We bought two of them ... and we're betting the farm on [the system]," said Vice Chancellor Larry Hengehold. "It's a tremendous horse. We have gone through stress testing and other testing to make sure it meets our needs, and we can't even make it breathe hard. It's a big engine."

Brad Day, an analyst at Giga Information Group Inc. in Cambridge, Mass., said IBM executives have taken steps to "advantage themselves" in a Web server market dominated by Sun and HP. "[With Blue Hammer], IBM has added a much more powerful cluster management facility with one control station, so the time it takes systems administrators to manage their computer environment to port in the software has been drastically reduced, which is also a cost reduction," he said.

Bob Venable, manager of enterprise systems at Blue Cross/Blue Shield of Tennessee in Chattanooga, said his company has saved money since it began using Blue Hammer.

"We use this software to process health care applications and insurance claims," Venable said. "In 1999, we processed 38.2 million health care claims. This software eases administration for all the computers, and we have been able to lower our corporate costs because of it."

The price of the base configuration of two six-way clustered S80s with a control workstation begins at $705,000. IBM also plans to expand the S80 cluster system to include its 80-class Unix midrange servers. ◗



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LSI LOGIC

Pretty Bad Day With Pretty Good Privacy

A simple client request for PGP encryption turns into a messy affair; multiple keys leave client annoyed

Security Manager's Journal

GRRR. . . . USERS, pah. So far in my career, I've always managed to avoid doing desktop-support work. I know it's absolutely necessary, I know it's hard to do well, but most of all, I know I don't have the patience for it. Unfortunately, this week I had no option. We had an urgent request for some desktop support for a client who is trying to use PGP.

PGP stands for Pretty Good Privacy. It's one of the world's most popular cryptographic programs, designed to encrypt and decrypt e-mail, files and so on. It's a good program with a lot of popular support and a very interesting history.

The latest version has been integrated into Windows quite well — right-click on a file to bring up the PGP menu, easy buttons for Microsoft Outlook and simple, clear user interfaces. But like most cryptographic software, there's a lot of complexity hiding under that pretty face.

The client who needs support is a very senior executive and a very important client. He has personally hit on the idea of using PGP to encrypt his communications, and it's up to us to comply. He doesn't mind whether we do or not — if we can't read his e-mail, we can't do business with him, and it's no skin off his nose.

Instant Expert

The PGP expert at the client's company is a guy from the firm's IT help desk who installed the software two weeks ago and has — and I quote — "mucked around with it a bit."

There are two experts on PGP in our company: one in the head office, who configured our version of PGP and rolled it out around the company, and me. My expertise with PGP is based on the fact that I know cryptography theory extremely well, and I once met the author of PGP, Phil Zimmerman, at a cocktail party. I've never actually seen the software before, but that's still enough to make me an expert, especially since our guy in the head office is on holiday this week and we're losing business *now*.

Once I start exploring PGP, it turns out to be relatively simple. The interface is good, the buttons (usually) intuitive, the commands have obvious names and there are wizards to guide you through anything remotely complicated. In a very short time, I have set it up on three test machines and generated keys for each machine, and am swapping encrypted e-mail with ease.

Unfortunately, however, the original head-office expert who set it up did what I call an "academic" job of designing the system. An academic job is one that meets best practices; conforms to all the basic rules set out in the last article by the latest and greatest expert in the field; is based on sound, logical arguments; and is almost completely unusable in practice.

In this case, instead of just generating a pair of encryption keys per user, then publishing one of the pair for people to use to encrypt things for your eyes only, our default installation generates seven pairs of keys. Yes, seven. One is the unique pair of keys for that particular user, then we have the incoming Additional Decryption Key (ADK), the outgoing ADK, a revocation key, a corporate signing key and two other key pairs whose names mean nothing to anyone. I know what an ADK is only because I used to teach cryptography, and I'm not going to explain it here because you'll get bored and stop reading.

All these keys have a theoretical purpose, but they're all completely inapplicable to our current situation. In fact, the client is distinctly unimpressed at the clutter and promptly deletes them all and demands we go away and do it again better. But just to ensure that no meddlesome end user can circumvent these six additional pairs of keys, only one person has the ability to override the relevant configuration options. Yes, that one person is the head-office expert, who's on holiday.

In the end, PGP is just as prone to stupid users as any other program, and most of the problems turn out to be user error. We put in a bit of a bodge job to get around the clutter of keys by downloading the freeware version from the Web and installing it ourselves to use until we can get our properly licensed version working correctly.

I spend a day and a half firefighting the problems — a day and a half in which I'm constantly biting my tongue to stop myself from suggesting that it would be quicker and cheaper all around just to hire a courier to deliver these oh-so-sensitive e-mails. I now have renewed respect for desktop-support staff and renewed determination never to let it become a regular part of my job.

A Grand Plan

The rest of the week is spent delving a little deeper into my idea of smart/proximity card-based access. I have grandiose ideas about doing away with passwords altogether by using smart cards to control access to the workstations. I have three months to come up with a working prototype, and everything so far is looking positive. A key component of this prototype is that the smart card also works as a proximity card, so that we can also use it to control access to the buildings.

When I looked at this idea four years ago, all the proximity-card manufacturers said, "What's a smart card?" and the smart-card manufacturers said, "What's a proximity card?" so I quickly stopped looking. This time, I seem to be getting a different story. While a few companies still just scratch their heads, I find two companies that claim it's a simple exercise and that they've done it before.

One company is Westinghouse Security Electronics (WSE), which manufactured our physical access control system. One of its standard proximity cards appears to come with a built-in smart card. If I can confirm that WSE uses an industry-standard format for its smart cards, it may all be a very simple exercise. The other firm is RSA Security Inc., one of the best-known companies in the crypto world. An RSA representative dismisses the problem as trivial and says they've worked with Westinghouse plenty of times before.

If things continue to go this well, the prototype might be very easy to cobble together. My next task will be to try to make sure I'm choosing the right type of smart card, as I don't want to buy a solution that can't be used for anything else. As I know relatively little about the smart-card industry, I'm approaching this one like a true consultant — I know a man who is an expert on the subject, so I shall bribe him with an exceptionally nice lunch and pick his brains. That's the sort of work I like! ◗

THISWEEK'SGLOSSARY

PGP: Pretty Good Privacy software, developed by Philip R. Zimmermann, allows users to encrypt e-mail and other files for distribution to other users. PGP is one of the most widely used cryptographic programs available. Features include message encryption, digital signatures, data compression and e-mail compatibility. It is now owned by Network Associates Inc.

ADK: Additional Decryption Key allows a trusted third party to access data encrypted using public-key technology. The user encrypts the data using the recipient's public key as usual but then encrypts a copy of the data with a separate key known to a trusted third party. If someone other than the original recipient demands access, he can ask the trusted third party to decrypt it. Uses range from allowing management to decrypt files when the recipient loses the key to enabling government agencies to access encrypted files.

LINKS:

www.pgp.com: Offers a free downloadable version of PGP software for personal use and a commercial version. PGP.com is now a subsidiary of Network Associates.

www.rsasecurity.com: Includes information on RSA's encryption products plus frequently asked questions about many aspects of encryption.

www.wse.com: Product information on Westinghouse Security Electronics Inc.'s proximity-card systems.

This journal is written by a real security manager, whose name and employer have been disguised for obvious reasons. It's posted weekly at www.computerworld.com to help you and our security manager – let's call him Jude Thaddeus – better solve security problems. Contact Jude at jude.t@lycos.com or click on Computerworld.com's Security Watch community forum to participate in discussion topics.

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A Pocketful of Data

The Digital Wallet is 6GB of plug-and-play external storage that also reads compact flash cards from digital cameras and MP3 players. By David Essex

PORTABLE STORAGE has undergone amazing advances in the past half-dozen years, but it hasn't really kept pace with the capacity growth of today's multigigabyte hard drives. With the capacity of compact flash cards and Memory Sticks from Tokyo-based Sony Corp. topping off at a few hundred megabytes, digital cameras and MP3 players can quickly fill up. And sometimes a user may want to be able to back up the contents of a laptop while on the road. It would be nice to have something nearby with the capacity of a hard drive and the convenience, size and weight of a personal digital assistant.

That pretty well describes the new Digital Wallet from Minds@Work LLC in Irvine, Calif. Digital Wallet is a 6GB portable hard drive that connects to the Universal Serial Bus (USB) ports of PCs and Macintoshes.

Portable hard drives have come and gone. What makes the Digital Wallet unique is its ability to perform high-capacity disk operations without being connected to a PC. Other portable storage devices, notably Roy, Utah-based Iomega Corp.'s 40MB Clik and 2GB Jaz drives, offer similar functions. What they don't have is 6GB, enough for 6,000 high-resolution photos or 150 hours of music. Minds@Work says resellers will soon offer even higher-capacity drives.

With that much room, you can free up space on your digital camera, for example, by inserting its flash media into the included PC Card adapter, then lifting the door on the right side of the Digital Wallet and sliding in the adapter.

Four buttons are all you need to control downloading and uploading from the menu that appears in the monochrome LED. The Digital Wallet makes hard-drive sounds, Minds@Work's logo flashes on-screen and presto: your files are off the flash card and on the drive. The unit ships with an adapter for Compact Flash, the most popular storage type, but you can also order adapters for five other types, including SmartMedia and Memory Stick, for less than $100.

Besides augmenting the limited storage of portable digital devices, the Digital Wallet makes a nice supplemental hard drive for desktop systems, appearing as a removable drive in Windows Explorer. Its usefulness goes way beyond that, thanks to its ability to be quickly plugged into the USB ports of PCs and notebooks that have its software installed. Large database or image files can be more easily shared and displayed on other systems. With the bundled SmartBack Jr. from Rutilus Software Inc. in Irvine, Calif., you can use the Digital Wallet as a backup device and for synchronizing files among PCs. Also included are image management and archiving software.

The Digital Wallet contains a 54-MHz ColdFire processor from Motorola Inc. — essentially a computer on a chip that provides limited, PC-like control. Also inside is a 2.5-in. portable hard drive from Toshiba Corp. — the same model used in some Toshiba notebooks, according to Minds@Work. There's a monochrome LED that's strictly for status and control information; don't expect to view pictures or files on it. A small plastic attachment holds one end of the USB cable as well as the AC adapter, which doubles as a charger for the removable batteries.

The 4,200-rpm drive's 8M to 12M bit/sec. data transfer rate and 13-msec seek time are considerably below those of desktop drives, and USB limitations throttle performance. But I found no appreciable slowdown during informal tests I conducted. JPEG files on the Digital Wallet loaded about as fast as from the internal hard drive. Uploading several images from a compact flash card took about 10 seconds, an appreciable though tolerable wait.

Digital Wallet
Minds@Work LLC
www.mindsatwork.net
Price: **$499**

Some Concerns

Minds@Work still seemed to be working out kinks when I tried Digital Wallet a month after it began shipping.

For one thing, while Digital Wallet can hold a lot of photos, you can see them only if you use another machine.

And I couldn't get it to run without a call to technical support, which e-mailed a patch that resolved a conflict with Adaptec Inc. drive controllers in my Celeron-based Pavilion from Hewlett-Packard Co. and my Pentium III-based notebook from Gateway Inc. (This was a day after I was left on hold for 90 minutes during a weekend call to a technical-support line and finally gave up.) However, the drive soon stopped working on the HP, and I began getting Windows messages indicating a problem with my USB controllers.

Durability may be a concern, too. Although the 12-oz. unit feels fairly solid, the plastic doors for its battery and the adapter seem flimsy. According to Minds@Work, the unit has withstood drops of three and four feet in internal tests; I opted not to try that test.

The name of the product is a little confusing. Microsoft Corp. used to have a product called Wallet, now renamed Passport, designed to address secure Internet payment issues. Another product, the eWallet, is available from Ilium Software Inc. in Ann Arbor, Mich., for $29.95. It's a handy utility for Pocket PC handhelds that stores photos and personal information, including password-protected replicas of your credit cards (with personal identification numbers) and other items that may normally reside in your back pocket or purse.

The Digital Wallet shows promise as a unique storage option, but it may need tweaking before it can serve as a true plug-and-play device. My advice is to try the product before you buy it.

Essex is a freelance writer in Antrim, N.H. Contact him at david_essex @conknet.com.

In the Works

Computerworld is looking at several other types of removable storage tools for an upcoming ExecTech feature.

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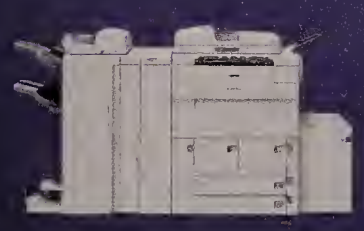

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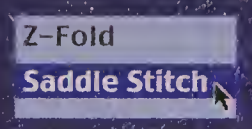

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Beyond Geek Chic

PHILIPS AND LEVI STRAUSS' ICD+ jacket may herald a new, high-tech combination of form and function

Electronic clothing may be a gimmick now, but it promises a future of technology invisibly integrated into our daily lives.

By Peter Panepento

THE LATEST IN fashion gadgetry will hit boutiques in Europe later this month. For about $900, plugged-in consumers will be able to purchase a jacket equipped with a remote-controlled mobile phone and an MP3 player.

The jacket, the product of an 18-month marriage of engineers from Koninklijke Philips Electronics NV in Amsterdam and designers from Levi Strauss & Co. in San Francisco, is the first practical example of wearable electronics — clothing that comes with electronic equipment. And it's just the beginning of what could become the next technological frontier.

Philips is already working on prototypes of garments that connect to the Global Positioning System so wearers can be found, for example, if they have an accident while skiing. It has also created an experimental sports bra that can measure the heartbeat of the wearer. Company researchers are working on clothing made of conductive fibers that will allow wearers to warm or cool themselves on the fly.

SMALL DEVICES, such as the one pictured at right, can be removed for cleaning and enable a jacket to have multiple functions

"It's clear that people carry all of this equipment with them," says Ellen de Vries, a public relations manager at Philips. "If you make 'intelligent' clothing, automatically you have all of that equipment with you."

While the Philips/Levi jacket, called the ICD+ (Industrial Clothing Design+), is the first wearable device to be marketed to consumers, the companies aren't the first to try their hands at wearable electronics.

Students at MIT and the Atlanta-based Georgia Institute of Technology, for instance, have been experimenting for years with wearable computer systems that, although cumbersome, have proved that you can literally stay connected while on the go.

The Australian Institute of Marine Science in Cape Ferguson, Australia, meanwhile, has created a system with a private company called WetPC Pty. in Garran, Australia, that allows users to control a computer attached to a wet suit while underwater and transfer data to researchers on land.

And IBM researchers have developed the IBM Wearable PC. While the 233-MHz system isn't ready for sale, officials boast that it has the power of a ThinkPad 560X shrunk to the size of a Palm Pilot.

"Initially, we think the Wearable PC will find applications in business," said IBM researcher Russell Budd in a written release. "I think you'll see people using these at aircraft flight gates, repairing your copier or tuning your car's engine. Eventually — well, who originally thought people would wear radios, tape and compact disc players?"

A New Fashion Genre

But because Philips and Levi Strauss are the first to hit the market with a practical piece of electronic clothing, they're well on their way to becoming leaders in a new fashion genre.

Levi's Pieter-bas Stehmann, associate brand manager for the ICD+ line, likens it to how Levi Strauss became associated with denim jeans in the 19th century. "It's a new direction that we all know is going to come," he says. "We are now pioneering electronics for the new worker."

Although the ICD+ jacket will be available only in certain parts of Europe — the phone runs on a cellular system that isn't compatible with American phones — news of its pending release has created a buzz on both sides of the Atlantic. *The Wall Street Journal* recently ran a lengthy feature on the jacket, and Levi Strauss and Philips officials say they've had an avalanche of media inquiries. "It's unbelievable," says Stehmann. "The impact worldwide has been remarkable. It's been going like fire."

Part of its initial success comes from the fact that the ICD+ actually looks like a jacket but acts like its own portable stereo system. It includes Philips ear gear and a microphone integrated into the jacket's collar. The earphones have an enlarged air chamber for enhanced sound. When not in use, they can sit in rubber housing below the collar on the front of the jacket.

The jacket also features a Philips Rush digital audio player and a Xenium phone with voice command and voice dialing capabilities. The phone is connected to the MP3 player, and both are controlled by a remote device that lets users switch between the two.

Stehmann says the jacket is washable after some of its pieces are removed and that plans are under way to create a wireless version of the ICD+.

According to de Vries, who is already modeling the jacket in the Netherlands, it performs the added functions without tipping off passersby that it's anything more than a simple jacket. "I have to show people, 'Look at what I'm wearing,'" she says. "The whole idea is you don't see the technology around you."

Panepento is a freelance writer in Erie, Pa.

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Desktop-management suites are more integrated, but interoperability and support for mobile users are still lacking. By David Essex

FORWARD LANGE, a technical adviser at Nabisco Group Holdings Corp., an $8 billion international food company in Parsippany, N.J., the software-distribution feature in the company's desktop-management applications suite has been an undeniable money-saver. Microsoft Corp.'s Systems Management Server (SMS) 2.0 has greatly simplified frequent upgrades of antivirus definitions, he says.

Last year, his group sent out 400,000 copies of virus definitions, a task that Nabisco's system isn't set up to handle. The company's application department employs SMS to upgrade SAP AG's R/3 client software as well as to distribute updates to its Essbase multidimensional database from Hyperion Solutions Corp. in Sunnyvale, Calif. "It's saving Nabisco a huge amount of money in distribution costs," Lange says.

For many companies like Nabisco, desktop-management suites are also valued for their ability to track licenses, manage hardware inventories, facilitate remote technical support and monitor improper activities. Operating on desktop PC clients and often complementing network-level software such as OpenView from Hewlett-Packard Co. and Unicenter from Computer Associates International Inc. in Islandia, N.Y., desktop-management suites such as market leaders SMS, Intel Corp.'s LANDesk Management Suite (LDMS) and Novell Inc.'s ZENworks provide centrally managed control over key aspects of users' desktops.

Desktop-management software and suites have historically been plagued by incompatible standards for collecting and storing hardware and software configuration data. This has made it hard to share data among competing products and related tools, especially asset-management software from the likes of Remedy Corp. in Mountain View, Calif., and Peregrine Systems Inc. in San Diego.

Today, most of the software supports the Common Information Model (CIM), a metastandard that accommodates older — yet still popular — standards such as the Desktop Management Interface, which provides a uniform way for hardware vendors to report system configurations to management software. While vendors report satisfaction with CIM as a widely followed standard, they acknowledge that true interoperability hasn't arrived, though users are clearly demanding it.

Two trends should continue to influence the design of desktop-management suites, according to vendors and analysts. The biggest is the need to

GETTING A GRIP ON DESKTOPS

manage remote and mobile hardware that today's suites barely touch. In addition, technologies such as Lightweight Directory Access Protocol, Novell Directory Services (NDS) and Microsoft's Active Directory enable information technology administrators to include users alongside PCs, printers and other devices in a broader, more useful view of system resources. Further trends toward thin clients and server-based applications are driving this influx of directory standards into desktop-management suites.

Three IT managers agreed to share their experiences with desktop-management suites. All say they're generally satisfied with their tools. But they also say interoperability and standardization could still stand improvement.

Managing a Cast of Thousands

Lange uses SMS to manage about 9,000 Windows NT-based PCs in 184 locations in the U.S. The suite's main functions are software distribution, hardware inventory and remote control, while App Manager from Santa Clara, Calif.-based NetIQ Corp. monitors mission-critical NT applications and NetView from Austin, Texas-based Tivoli Systems Inc. keeps an eye on the mainframes. Other departments use Remedy's Asset Management, but for them to get SMS data, Lange must create SQL reports in SMS and e-mail them. He says the data-sharing process should be more automated.

The system's inventory function helps the company locate leased systems and control software that could present problems. "We've been able to track down nodes that had illegal software that we didn't want on our systems and send out SMS jobs to remove them," Lange says. He said he plans to soon put hardware inventory reports on the Web for all employees to access.

Lange says he experienced a few bugs with SMS. For example, software packages created on Windows 2000 servers were ignored when downloaded on Windows NT 4 systems. SMS had to be uninstalled and then re-

> [SMS] is saving Nabisco a huge amount of money in distribution costs.
>
> **WARD LANGE, TECHNICAL ADVISER, NABISCO GROUP HOLDINGS CORP.**

installed on Windows 2000 servers that functioned as domain controllers. And some site deletions in the SMS inventory screens didn't always propagate through the directory hierarchy. Microsoft addressed the problems in a June service pack upgrade.

Lange says he has specific ideas for the next SMS upgrade. "We would love multicast," he says. Multicast would speed transmission of updates, which can exceed 100MB per system. Also on his wish list are "Delta" upgrading, which saves time and bandwidth by transmitting only the parts of a program that have changed; better integration with Windows 2000 (the full rollout is in the planning stages); and a smaller client footprint.

Microsoft group product manager David Hamilton says these items are under consideration, but customer demand for multicasting has been minimal, in part because multicasting requires additional server and network investments. "We think it's a young technology," Hamilton says.

Lange says he's considering using additional inventory software in SMS to perform predictive failure analysis based on data from newer hard drives that report on their own health. He's also evaluating SMS's license management feature. Nabisco's server group is investigating using thin clients, but it's unclear how they'll be managed if they don't run Microsoft's Terminal Server thin-client software. "If you're using an appliance that doesn't have a local hard drive, SMS would have little role in that," Lange says.

Permission Required

Alex Kiss, manager of IT services and operations at Lufthansa Systems Network at Chicago's O'Hare International Airport, and Clark Eggers, engineering and project manager, use LDMS Versions 6.1 and 6.4 to manage 700 Windows NT workstations and laptops in the Western Hemisphere offices of the German airline's cargo division. Administrators elsewhere use LDMS to manage an additional 3,300 systems in 230 global locations.

Kiss says Lufthansa engineers in Germany picked LANDesk largely because of a critical item: federal privacy laws requiring employees' permission each time their systems are remotely accessed. However, "In our [North American offices], we've turned off the permission feature," he says.

LANDesk provides other benefits, especially for remote troubleshooting and software distribution. When necessary, workstations can be rebuilt by using LANDesk to tell a local management workstation to start a sequence that reboots the system and uses a homemade server script to reinstall the system's software. LANDesk's remote-control feature lets Lufthansa's help desk get to the root of technical problems, which are often mischaracterized by users, according to Kiss.

MARC BERLOW

◀ **LUFTHANSA SYSTEMS NETWORK's Alex Kiss (left) and Clark Eggers say they're interested in LANDesk's new multicasting software. "It opens up a lot of options," Eggers says**

Systems that don't meet minimal hardware requirements are easily spotted in the LANDesk inventory. "We found a number of PCs that were short of memory," Eggers says. "We were able to quickly upgrade them." Adds Kiss, "Last year, we were able to tell which sites did not complete their Y2k upgrades. We were able to use LDMS to get them their updates."

Eggers says that LANDesk's software distribution and hardware inventory features are easy to use. But despite the availability of industry standards for reporting system configurations, he says LANDesk's ability to detect certain chips and peripherals is lacking. "In my opinion, it could be better."

Kiss and Eggers say that in the near term, they're keenly interested in LANDesk's new multicasting software, which speeds software distribution and economizes on network bandwidth by transferring packages to subnets, rather than directly to clients. "That's one hell of a tool," Eggers says. "It opens up a lot of options."

The implications of an upcoming thin-client development project are fuzzy and will depend on the robustness of LANDesk's thin-client software, yet to be evaluated by Lufthansa. "How it will fit into LANDesk, we don't know yet," Kiss says.

Special Delivery

Novell's ZENworks Version 1.1 is an indispensable tool for software distribution and remote technical support at Hamilton Sundstrand Corp., a division of Hartford, Conn.-based United Technologies Corp. that manufactures auxiliary power units and fans for airplanes. Tom de Castro, master information systems consultant at Hamilton Sunstrand, and Laura Hepburn, a team leader from El Segundo, Calif.-based Computer Sciences Corp. who works at the San Diego site, say ZENworks enables them to almost completely automate application installations on about 850 Windows NT 4.0 workstations. "We have literally hundreds of applications, and every one is delivered, in one way or another, with ZENworks," de Castro says.

The team used ZENworks to roll out Microsoft's Internet Explorer 5.0 after business hours, and plans to use it for a migration from Novell's GroupWise e-mail to Microsoft's Exchange and Outlook. Finer control over applications will come with ZENworks 2 — the upgrade is under way. De Castro says it will let users run application objects and can associate such objects with individual workstations. He says he's also eyeing recently released ZENworks for Desktops 3, especially its offline distribution feature, a critical piece in supporting mobile systems.

De Castro says that because of its NDS integration, ZENworks was the only suite given serious consideration. The company runs mostly NetWare servers. NDS brings its familiar scheme of user rights and directory-based "policy packages" to desktop management, he says. "It's a good design, and the fact that they leveraged it so well was really the deciding factor," says de Castro, who nonetheless criticizes Novell's decision to include hardware inventory data in the first version of the directory. "That doesn't belong in NDS," he says. "It's a lot of volume. It's too much, and you need a better reporting interface." He says he would also like to use the suite to determine which applications have installed particular Dynamic Link Libraries.

De Castro says the slow performance of ZENworks' remote-control feature is one of the suite's few disappointments; instead, he and Hepburn use Cupertino, Calif.-based Symantec Corp.'s PCAnywhere to manage mobile systems. He says he also needs ZENworks to do a better job reporting the status of application installations, which sometimes hang up when ZENworks fails to complete its processes.

Overall, satisfaction with ZENworks is high, though not easily measured in dollars and cents. "I think we've saved time," Hepburn says. ◗

Essex is a freelance writer in Antrim, N.H.

Desktop Management Suite Product Summary

Product: LANDesk Management Suite 6.4
Company: Intel Corp.
Pricing: Starts at $750 for five nodes; server software starts at $150
Web: *www.intel.com*

Product: Microsoft Systems Management Server 2.0
Company: Microsoft Corp.
Pricing: Starts at $239 for five users; server software comes with Windows NT Server 3.51 and later
Web: *www.microsoft.com*

Product: ZENworks for Desktops 3
Company: Novell Corp.
Pricing: Starts at $295 for five users; server included with Netware 4.11 and later
Web: *www.novell.com*

> "We have literally hundreds of applications, and every one is delivered, in one way or another, with ZENworks."
>
> TOM DE CASTRO, INFORMATION SYSTEMS CONSULTANT, HAMILTON SUNDSTRAND CORP.

MANAGEMENT GOES MOBILE

The need to manage mobile and remote systems will fuel most of the growth of desktop management software over the next few years, predicts research firm International Data Corp. (IDC) in Framingham, Mass. IDC estimated the U.S. mobile workforce at 36 million last year and predicts nearly 7% annual growth. And 27% of network executives surveyed said remote users represented at least one-fifth of their workforce. So where are the tools to manage these users?

While desktop management suite vendors are expected to someday absorb these remote-management tasks (Novell, for one, last month added features for mobile systems to its ZENworks 3 suite), users today rely on products from a small group of companies that specialize in the unique problems of tracking and managing systems outside the office.

Callisto Software Inc., Mobile Automation Inc., On Technology Corp. and XcelleNet Inc. offer software that can manage connections that are frequently broken and conducted over low-bandwidth connections. Mobile Automation, On Technology and XcelleNet also support handheld operating systems such as Microsoft Corp.'s Windows CE and Santa Clara, Calif.-based Palm Inc.'s Palm OS.

Two important technical features in this niche include checkpoint restart, which allows a portable system to resume a download where it left off after an interruption, and bandwidth throttling, which adjusts downloads so they don't hog a mobile computer's network resources.

But users want more than technical features.

"It is critical for these vendors to tie into the large installed base of these management suites, as IT administrators prefer to have one view for management," says Stephen Drake, a senior research analyst at IDC. "For example, Callisto integrates its Orbiter into Microsoft's SMS, and XcelleNet's Afaria is also integrated with SMS and to a lesser extent works with Tivoli['s NetView], CA['s Unicenter] and HP's OpenView," Drake says.

These vendors acknowledge that their connections to handhelds, especially, aren't as solid as to desktop PCs. Most require handhelds to be docked in their PC synchronization cradles for software updates and reports on system status. And some notebook PC vendors – notably Gateway Inc. in San Diego – don't uniformly support Desktop Management Interface, says Becky Hjellming, vice president of product development at Callisto Software.

"One of our most important directions for the future is native engine support" for even the newest wireless devices, like pagers and Web phones from Waterloo, Ontario-based Research In Motion Ltd., says Mike Teplinsky, an enterprise consultant at Mobile Automation.

Teplinsky touts the benefits of including data from mobile devices in desktop-management inventories. Upgrades and other costly system changes are easier to justify; users can avoid trips into the office for service; and help-desk calls are reduced, he claims. Drake cites statistics that corroborate the help-desk opportunity. "In 1999, in interviews with over 20 companies with extensive remote user bases, IDC found that resolving a typical help desk call takes 80% to 100% longer for remote users than for LAN users," he says.

One user of Intel's LANDesk Management Suite confirms that bandwidth is indeed a barrier to effective administration of notebooks. "That's the reason we don't attempt to provide remote support for our laptops," says Alex Kiss at Lufthansa Systems Network. – *David Essex*

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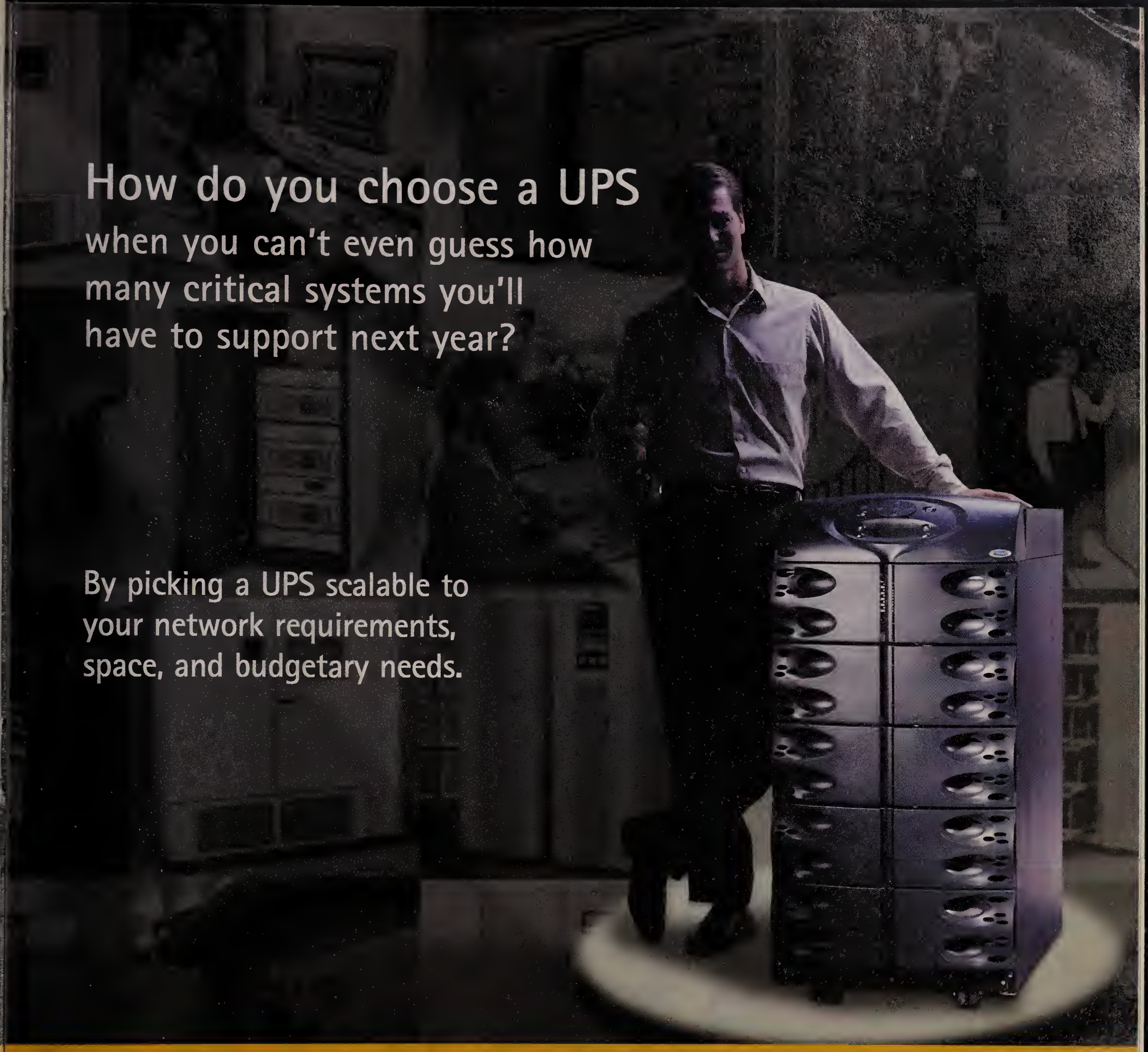

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SUN LIFE ISN'T READY to put any storage off-site, says Laurence McKenzie, vice president of worldwide technology and strategy

SETH RESNICK

OUTSOURCING Anxieties

As their needs increase, companies are exploring the variety of storage options available but are wary of trusting mission-critical data to outsourcers.

By Elizabeth Ferrarini

TONY MEROLLE, a senior data center manager at Symbol Technologies Inc., a $1 billion bar-code system manufacturer, says he doesn't worry that the HP 3000 legacy system in his company's Bethpage, N.Y., data center will have a major meltdown. Hewlett-Packard Co.'s Recovery Support Services' trauma team has rehearsed the disaster recovery drill — bring the backup tapes from Arcus Data Security Inc.'s vault in Boston to the hot site in Valley Forge, Pa., and begin restoring about 110GB of data on an identical HP system. HP's dry runs have restored the production system in less than seven hours.

But Merolle says Symbol expects to enhance some of its current storage applications through outsourcing arrangements. And though he says he doesn't worry about disasters, Merolle acknowledges worrying about the accessibility of the data. One option calls for backing up the data center servers online to similar servers at a remote hot site — either owned by Symbol or maintained by a third party.

Pay-as-you-go storage also appeals to Symbol as a way to complement an 8-terabyte (TB) EMC Corp. Symmetrix system. "We're talking to vendors such as HP, Dell and EMC about storage systems configured for the disk space we need at a

particular time. We'd just pay for what we use," says Merolle.

However, outsourcing for an SAP AG application didn't show much promise. Merolle says some of the information technology executives looked at Qwest Communications International Inc. in Denver. "We require a response time of no more than 1.5 seconds per SAP transaction. I want to get it below a second," he says. Qwest offered a 6-second-per-transaction guarantee.

IT professionals at Fortune 2,000 organizations are taking a hard look at storage outsourcing services, ranging from on-demand, on-site virtual utilities to remotely managed, pay-per-gigabyte services. But many of those IT staffers are kicking these services' tires and then walking away — at least for now. Many of them say they can do a better job managing storage for bread-and-butter applications than a third party can. And they say they don't want to give up the control and security of on-site storage. Meanwhile, some storage outsourcers and systems integrators are quietly making inroads into many organizations' on-site storage operations.

Glenn Jacobsen, a senior partner at the Trilliant Group, a Cincinnati-based firm that assesses storage technologies, says, "We haven't seen any movement or desire from our Fortune 500 clients to outsource any storage operations to an [outsourcer]. Our clients don't want to give up total control of their data to a third-party wire miles away."

Outsourcing may provide IT executives with an option when they face the need to mold an unruly band of disparate servers into a well-managed, scalable storage infrastructure.

Like a lot of insurance companies, Sun Life Financial Services of Canada Inc. has given business units the go-ahead to buy the most cost-effective storage, says Laurence McKenzie, Sun Life's vice president of worldwide technology and strategy, who works out of the Canadian firm's Wellesley, Mass., office. The result for Sun Life, which manages $225 billion in assets, consists of a 7TB collection of about 100 Windows NT and NetWare file and print servers, and about 150 development servers. Distributed storage growth runs about 30% per year. In contrast, mainframe storage on an older EMC Symmetrix remains stable with less than 1TB.

Working with the CIO at Sun Life's home office in Toronto, McKenzie has begun to consolidate the distributed servers into a scalable storage infrastructure managed by a central entity.

"We need better data protection for backups and disaster recovery, as well as to cut the windows for these functions," he says. While McKenzie won't go into detail about Sun Life's plans, he says some of his research has focused on storage outsourcing.

"StorageNetworks, which offers on-demand storage, did a nice consulting job of helping us to understand our key problems. However, we aren't ready to put any storage off-site," he says.

McKenzie has also looked at Storability Inc.'s on-site service. For a service-per-gigabyte charge, the Southboro, Mass.-based start-up will configure and lease the on-site storage and manage it remotely using off-the-shelf tools. Storability has no access to corporate data.

"These folks say they can leverage part of my installed base with a new storage offering. This mix would make my mature storage more reliable," says McKenzie, who adds that although he's intrigued by this offering, he prefers to keep his outsourcing options open.

> We have the staff to manage our database applications and storage better than anyone else. Outsource if you can't get the resources to do it yourself.
>
> **HUGH HALE, BLUE CROSS/BLUE SHIELD OF TENNESSEE**

Where the data resides in relation to applications can be critical to the IT infrastructure, so keeping the storage systems with their Sybase Inc. and IBM DB2 servers will remain the norm for Blue Cross/Blue Shield of Tennessee in Chattanooga. Hugh Hale, director of technical services at the health insurer, may help IBM evaluate its new products and services, but he says he won't consider an outsourcing arrangement with IBM. "We have the staff to manage our database applications and storage better than anyone else. Outsource if you can't get the resources to do it yourself," he says.

Storage outsourcing may offer more firepower than even a Fortune 1,000 firm needs, or it just may not mix well with the way it does business.

Wendy's International Inc., a $5 billion fast-food chain, serves millions of burgers each year, but its corporate data center manages a lean 550GB of storage, and 300GB of that is mainframe storage. "We don't have enough storage growth to warrant outsourcing any of it," says Ed Ohanian, director of enterprise technologies at Wendy's in Dublin, Ohio. "I haven't bought any mainframe disks in 18 months."

R. R. Donnelley & Sons Co., a Fortune 1,000 commercial printing firm in Chicago, maintains a close relationship with its clients, including Harvard Business School Press, publisher of the *Harvard Business Review*. Each step of the prepress process at an R. R. Donnelley plant consists of having data readily available from on-site, high-performance storage repositories.

"When we go to put ink on paper, time is of the essence. Taking the storage outside of a plant's control would put us in a bad position. How would we meet a publisher's requirement if something goes wrong? We'd be dead in the water," says Kirk Brauch, the prepress technology consultant at R. R. Donnelley, who creates policies for the firm's IT purchasing decisions.

The reluctance of large companies to embrace storage outsourcing hasn't deterred storage system integrators, like Integrated Archive Systems Inc. in Palo Alto, Calif., from expanding beyond delivering and installing equipment. For the past six years, Integrated Archives has done work for a mix of Fortune 1,000 companies, such as Sybase, and dot-coms, like Yahoo Inc. Integrated Archive President Amy Rao says that later this year, the company plans to manage storage-area networks built by customers. "We'll be offering both hands-on services and remote monitoring services from data servers, where we'll collocate our servers," she says.

Although it's a very conservative first step, storage outsourcing for remote desktop backups or a Web site relieves an IT staff of some administrative tasks. For example, mobile and telecommuting employees at Kemper Insurance Co. can back up their PCs and laptops over the Web to servers at Connected Corp. in Natick, Mass., according to Glenn Gaudet, Connected's product marketing director.

What should you do if you have excess capacity in your data center?

"Outsource," says Jerry Lynch, director of operations at Online Computer Library Center Inc. (OCLC) in Dublin, Ohio. This nonprofit organization provides online referencing services to about 30,000 libraries in 65 countries. Its data center has 20TB scattered across three IBM S/39s, an IBM RS/6000, a Tandem Computers Inc. machine with an S70000 processor, and several Sun Microsystems Inc. servers, including an E10000 and an E4500. OCLC's storage needs are growing 30% per year, Lynch says.

"We're looking to lease 15,000 square feet of our data center to a start-up," he says. "We're also looking at making storage space available to libraries."

Ferrarini is a freelance writer in Arlington, Mass.

Look Before You Outsource Storage

Some CIOs and chief technology officers may hesitate about outsourcing storage, but they don't mind giving advice about how to select a storage outsourcer. Here are some of their tips.

John Brighton, CIO, Aetna Inc., Hartford, Conn.:

- Precisely define the systems' requirements for availability, reliability and services.
- Place your environment with a company that stands with you, has both solid technical and financial strengths and can change with your needs.

Hugh Hale, director of technical services, Blue Cross/Blue Shield of Tennessee in Chattanooga:

- Don't just meet the service's staff. Get their résumés and review their qualifications.
- Service-level agreements should focus on application reliability and response time.

Jonathan Harper, CTO, FundsXpress Financial Network Inc., Austin, Texas:

- Get all schedules for administrative tasks, such as backups, written into your contract.
- For storage on demand, forecast your capacity needs by time periods. Give the schedule to the service so it can plan its space allocation.
- Determine how much it's going to cost your staff to oversee the service.

– Elizabeth Ferrarini

Easter Eggs

BY RUSSELL KAY

EASTER EGGS aren't unique to computer programs. They also occur in movies, music, art, books and other creations — but it's in computer software that they have achieved their greatest notoriety. An Easter Egg may be as simple as a message hidden in the object code of a program as a joke, meant to be discovered by people disassembling or browsing the code. More often, it's a graphic or sound effect produced by a program that's intended either as a joke or to display program credits.

It would appear that many programmers' desire for professional recognition — or even cultlike immortality of a sort — isn't being adequately satisfied by their employers, because most of the Easter Eggs that have been documented are in some way tied to a hidden list of credits. These usually present the names and occasionally pictures of the program's developers, often with animation.

DEFINITION

An **Easter Egg** is a generally amusing message or piece of software hidden inside another program, which could be an operating system or an application, often listing or depicting programmers on the development team. One usually accesses an Easter Egg by means of an unlikely or unusual combination of keystrokes.

My personal favorite among the Easter Eggs I've seen is a routine buried in Microsoft Corp.'s Excel 97 spreadsheet program. Not only did its creators put their names into the software, but they also chose to do it by creating a flight simulator inside the Excel program, in which you could fly around over a virtual landscape until you found a black monolith — with credits — like the one in the Stanley Kubrick film *2001: A Space Odyssey*. The instructions for getting there aren't something you're likely to invoke by accident. Here's the trick: Open a new Worksheet and press F5. Type "X97:L97" into the Reference box and hit Enter. Press Tab, then hold Control-Shift and click on the Chart Wizard toolbar button. Now you can use the mouse to fly around, with the right button forward and the left button reverse.

Not to be outdone, the Microsoft Word 97 developers included their own game: pinball. Open a new document, type in "Blue" and select the word. Go to Format/Font and choose Font Style Bold, Color Blue. Back in the main screen, type a space after "Blue" and then click on Help/About. On the Word icon, do a Control-Shift-left click, and the game appears. Use Z for the left flipper, M for the right flipper, and Escape to exit.

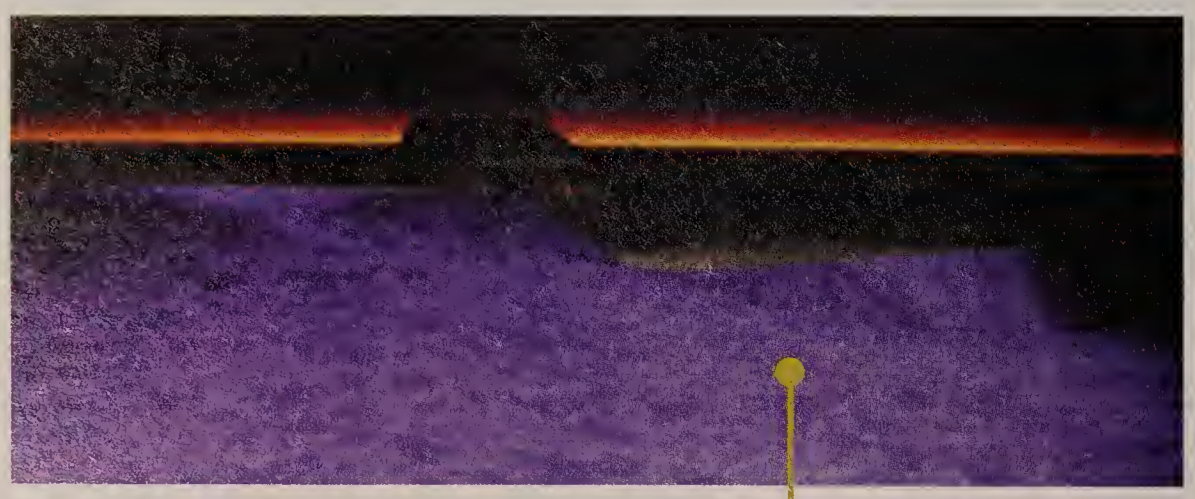
Sometimes Easter Eggs become a running gag among developers. For example, in Lotus Development Corp.'s Notes Version 4.0, if you click on Help/About Notes and type "elvis is not dead" (all lowercase letters), the head of Ray Ozzie (Notes' chief architect) appears and starts spitting out credits. With Notes 5.0, if you do the same thing but instead type "yes he is", you get this version's credits courtesy of Mr. Ozzie's simulacrum.

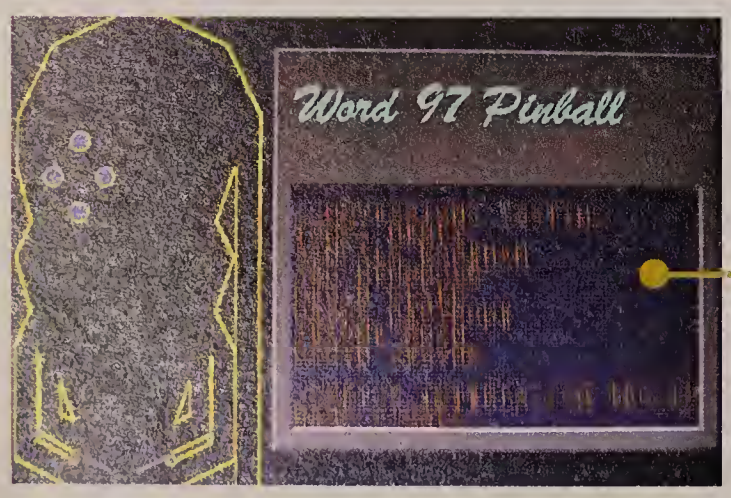
An Oldie

An old but well-known (relatively speaking) Easter Egg, in Word 2.0, makes a marketing statement of sorts. Click on Tools/Macro, type in the macro name "Spiff" and click on the Edit button. When the macro editing window opens up, select the window contents and delete them. Then click on File/Close. When you're asked to save changes, respond with Yes. Click on Help/About, then click on the Word icon in the dialogue box. You'll see a little animation showing a series of figures, helped by the Word icon, defeating a huge green monster identified as "W.P."

Easter Eggs are certainly amusing and generally good fun, but there's a price we pay for them. One is in the amount of development time that's siphoned off into such activities. There's no way to tell how much of an impact this has on any given product's schedule, but it's pretty clear that it didn't shorten the development and debugging process.

Another is code bloat. With disk storage becoming ever cheaper and newer systems having more and more RAM as standard, code size may be less important than it once was, but clearly, any application that has an Easter Egg inside it has to occupy more disk space, and quite possibly more system RAM than it would for just the application's normal operations. And that means more time to load, install and contend with. ◗





EXCEL 97 users can find a flight simulator hidden inside the spreadsheet program

PINBALL is the Easter Egg of choice for the developers of Word 97

Not Just Computers

The desire for credit isn't confined to computer software developers. Independent stop-motion animator and filmmaker Mike Jittlov, who is perhaps best known for his 1988 feature film, *The Wizard of Speed and Time*, was once commissioned by The Walt Disney Studios to create an animated segment for one of its television programs. The contract apparently specified that no credit would be given to the animator. Knowing this, Jittlov spelled out his name and credits in the parade of marching toys that he created, much as a college marching band spells out a word during a halftime show. Those credits couldn't be removed without destroying the entire segment! – *Russell Kay*

Hunting for Easter Eggs?

The following Web sites contain information about Easter Eggs:

- www.eeggs.com
- www.htsoft.com/easter
- www.worldowindows.com/w98egg.html
- www.palmlife.com/egg.html

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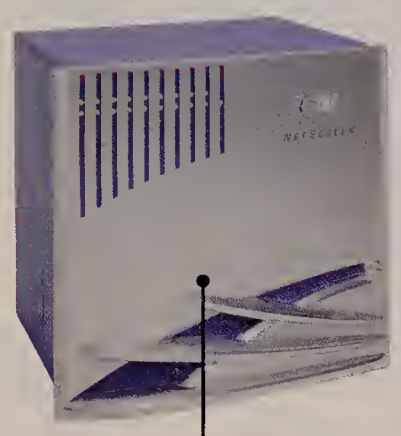

Fig 2. Yep

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E-Commerce Comes To Those Who Travel

NetMorf transforms e-commerce Web sites to support wireless users

BY MEGHAN HOLOHAN

NETMORF INC. wants to help corporate information technology departments satisfy the needs of the growing population of mobile device users who want access to e-commerce applications over the Internet.

The Boston-based vendor thinks that so-called screen scrapers that pare down HTML-based Web pages for wireless devices aren't effective or easy to negotiate. NetMorf's SiteMorfer media server provides companies with a modular, XML-based platform that enables users to rapidly develop and deploy e-commerce applications that support any mobile device, says NetMorf chief scientist Rajeev Tipnis.

A Customized Catalog

PurchasingCenter.com Inc. in Burlington, Mass., which provides products to maintenance service companies, uses SiteMorfer to organize its product catalog so maintenance workers in the field can place orders from handheld devices such as those from Palm Inc. in Santa Clara, Calif., and Wireless Application Protocol (WAP)-enabled phones. PurchasingCenter customizes its user interface for each maintenance company it contracts with.

"Not everyone has a desktop [computer], and many are mechanics, so we had to develop a way for them to access our sites and catalogs. [NetMorf's technology] is a practical way of help," says Bill Sullivan, vice president of industry marketing at PurchasingCenter.com.

Sullivan says he used NetMorf's product to make his catalog interface look like a standard order form instead of an Internet application.

NetMorf uses an XML-based dynamic content specification it calls SiteMorfer Markup Language. The SiteMorfer media server includes an application server and a device server. The application server receives a request from a mobile device, retrieves the information from the back-end database using a plug-in, translates the search results into XML and returns the results to the device server. SiteMorfer device plug-ins then convert the XML content into the appropriate mobile markup language, such as the Wireless Markup Language (WML) or the Handheld Device Markup Language.

SiteMorfer's modular architecture means that it can support additional databases or mobile markup languages by adding new plug-ins. This approach means less hard coding when developing Web applications, says Tipnis.

CEOExpress Co. uses SiteMorfer to connect CEOs to the resources they need, such as market information, news and legal resources, says Christine Eyre, vice president of marketing at the Boston-based company. The firm's clients appreciate having the ability to program all the information they want to see on their handheld devices from their desktops, she says. If a user wants to see only content from Nasdaq and CNN, for example, he can choose to program only those links for his mobile device.

Although her customers like SiteMorfer's ease of use, Eyre says there is one drawback.

"We have quite a lot of European customers. In February, when we launched, NetMorf could not support the European system," she says. European handheld standards differ from those of the U.S., and CEOExpress's launch "was in the U.S. only," she says. "That's not the way you want to launch in a global community."

NetMorf has promised an upgrade that will support the European standard, says Eyre.

Fair Game

Maggio says NetMorf markets to any company that participates in e-commerce rather than content-based exchanges. But larger competitors, like IBM, are also focusing resources on mobile Internet users, says Mark Zohar, an analyst at Forrester Research Inc. in Boston.

"There are lots of hurdles in the way," says Zohar. But he acknowledges that NetMorf has an early lead with its use of a modular, XML-based architecture.

NetMorf isn't profitable yet, but Maggio says he believes the company is in the right place at the right time. He estimates that NetMorf's revenue for this year will about $3 million and predicts $25 million for next year.

NetMorf landed its first large customer, Barnesandnoble.com Inc., in early August, when the New York-based online bookseller announced that it would use SiteMorfer to create an e-commerce site for customers who use mobile devices. ◗

Holohan is a freelance writer in Athens, Ohio.

STELLA JOHNSON

CO-FOUNDERS Shyam Kamadolli (left) and Rajeev Tipnis say NetMorf will be the market leader for the mobile e-commerce infrastructure

NetMorf Inc.

COMPUTERWORLD emerging companies

Location: Boston

Telephone: (617) 578-9800

Web: *www.netmorf.com*

Niche: XML-based server software for creating and delivering e-commerce applications for mobile devices

Why it's worth watching: IT managers can use NetMorf technology to create customized access to e-commerce sites and back-end data for users with mobile devices.

Company officers:
- Michael Maggio, CEO and president
- Rajeev Tipnis, founder and vice president of engineering
- Shyam Kamadolli, founder and chief technology officer

Milestones:
- 1999: Incorporated
- February 2000: SiteMorfer 2.0 launched

Employees/growth rate: 40; 200% annual projected

Burn money: $11.7 million in Series B funding from VantagePoint Venture Partners Inc. and DSLnet Inc. and $610,000 in Series A funding from private investors

Products/pricing: NetMorf charges $100,000 for its software, plus an annual maintenance fee of $1,000 to $5,000 and an initial consulting fee of $15,000 to $25,000.

Customers: Barnesandnoble.com, Purchasing Center.com Inc. and CEOExpress

Red flags for IT:
- Software is better suited to mobile commerce than to document exchange.
- NetMorf will face increasing competition from IBM and others as this market grows.

[the buzz]
STATE OF THE MARKET

Mobile Space Moving Fast

Forrester Research analyst Mark Zohar says the market for wireless Internet access will be huge. "It's difficult to say the size of the market – it could be all enterprise customers," he says. "[NetMorf] is really trying to add wireless extensions to all corporations."

However, he adds, "the market they're trying to participate in – using the back-end information and databases – is not going to move quickly."

While NetMorf aspires to be the standard application for all mobile Internet applications, Zohar says he thinks it will best serve start-ups and medium-size businesses. But CIOs know they will have to support wireless systems eventually, he adds, and NetMorf has an advantage as a first-mover in helping companies in the transition to support wireless devices.

Zohar says the competitive space for wireless Internet access is still developing. Here is a sampling of the more notable competitors:

Everypath Inc.

Santa Clara, Calif.
www.everypath.com

This application service provider (ASP) replicates customers' Web sites for mobile users. It acts as a buffer between users and the original Web sites, so customers don't have to make code changes to their original sites. Its rendering tool takes HTML or XML Web site content and dynamically translates it into WML script.

Air2Web Inc.

Atlanta
www.air2web.com

Also an ASP, Air2Web develops and hosts wireless applications for corporate customers. The Air2Web software allows Web administrators to connect to Air2Web's application platform to design unique content for wireless devices. The software supports XML and can adapt a single Web site for use with different types of handheld devices.

IBM

www.ibm.com

IBM's WebSphere Everyplace Suite server software is NetMorf's strongest competitor. It supports XML and provides tools for designing and organizing Web content for WAP-enabled mobile devices over the Internet and for conducting Internet transactions on wireless devices. – *Meghan Holohan*

It's Not Just a Dot.Com World

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DETROIT is aiming to become more than Motown by attracting more IT workers

Detroit in High Gear

The city has revved up its campaign to attract new IT workers and help ease the staffing shortages in its many less-publicized industries. By Erik Sherman

ADMIT IT: When you hear the word *Detroit*, you think of three automobile companies, probably Motown and maybe crime. But this is an area on the rebound and an information technology job market that is exploding.

Comerica Inc., a Detroit-based bank, says there has been $18 billion in new investment there since 1994, including investments in the headquarters of Compuware Corp. and General Motors Corp. In addition, Michigan has launched a $3 million advertising campaign to attract new workers.

"We are the only state to date that has moved its entire advertising budget away from business attraction to people attraction," says Doug Rothwell, president of the Michigan Economic Development Corp.

This is an area with an IT future. So if you're an IT worker not already in this market, what can you expect? We asked some Detroit IT managers to assess the local opportunities and offer advice that a relocator needs to know.

Corporate Landscape

Is Detroit an auto city? "Only in the sense that the major automotive honchos are based out of this area and they provide a good living to the people in this area," says Sharon Ball, recruiting and administration director at Comprehensive Data Processing Inc. in Southfield, Mich.

The region is a major center for the manufacturing of paint, pharmaceutical equipment, rubber products and garden seed. Given the concentration of industry, it isn't surprising that banking, insurance and other financial industries also have a heavy presence. Sun Microsystems Inc., Sybase Inc., Oracle Corp. and Microsoft Corp. have offices in the city, and health care is also a booming industry.

Jobs and Paychecks

Expanding business has meant expanding IT employment, often offering the opportunity to use leading-edge tools. "Just because you produce a computer chip doesn't mean you're any more technologically sophisticated than someone who produces an appliance," says Rothwell.

On one hand, there is extensive need for Web-based help, says Ball.

"There's a lot of Java," she says, noting that companies are looking for people who can do full Java programming and customization rather than use code-generating tools. There is also extensive demand for client/server application development using Oracle, C or C++.

"We, in fact, when bringing our entry-level people in, have taken to training them on Cobol because they aren't getting it outside," says Joan McEachen, a technical recruiter at Comerica. Other skills in high demand are Active Server Pages, TCP/IP, Windows NT, Windows 2000, Unix and SAP. Project and team leaders are also needed.

Salaries won't be as high as those in Silicon Valley, Boston or New York. But given Detroit's lower cost of living, they are good. Those just graduating from college will fall in the $35,000 to $45,000 range. With two or three years of experience, that jumps to between $60,000 and $65,000. Extensive Unix programming, depending on experience, can bring more than $100,000.

Managers with experience in e-commerce can fetch $110,000 to $175,000 plus bonuses, depending on the size of the company and the applicant's background. Per-capita income is slightly more than $27,000, and the average household income is just shy of $59,000.

The Rest of Your Life

Detroit isn't necessarily a place for those who shun crowds. The city proper has more than 1 million residents, with more than 4.3 million in the metropolitan area. However, those working there report relatively mild commutes, and the Metropolitan Detroit Convention and Visitors Bureau claims that the average commute is 23 minutes.

According to the group, winters get cold, with an average low of 16 degrees, but summers are more temperate, with an average high of 83 degrees. The median housing value is just less than $70,000, and the median rent is $376 per month.

There are plenty of major league sports, theaters and concerts, plus a 1,000-acre public area — Bell Isle Park — designed by Frederick Law Olmsted. The Great Lakes offer water sports, and a 45-minute ride gets you out of urban sprawl.

The Recruiter's View

Detroit's IT market is tight, says Bill Krajewski, president of recruiting firm Kratec Co. in Troy, Mich. Even with the easy-to-fill jobs, it takes two to four weeks for employers to find a match. If a company seeks a specialized individual, the wait can run up to six months. "That individual has a big choice of who to work for at this point," says Krajewski.

As traditional companies try to break into digital business, workers with e-commerce and Internet backgrounds will find themselves in strong demand. Krajewski stresses that the area is generally conservative. "One thing that hurts you [is] if you've done a lot of job-hopping," he says.

In addition to a college degree, vendor certifications from firms such as Microsoft and Cisco Systems Inc. are also important.

One approach a number of local companies, especially the larger ones, use is called "contract to hire." Rather than hire someone immediately, the company may look to bring a candidate into a temporary position and then evaluate him before making an offer. Krajewski says the trend among hospitals is toward outright outsourcing.

Whether someone looks at outsourcing firms or directly to corporations, the future looks bright. "It's tremendous — it's hard to find people now, and it's going to be like that for quite a while," says Krajewski.

Sherman is a freelance writer in Marshfield, Mass.

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Computer Programmer wanted by Consultant Placement firm in New York, NY. Must have Bach. in Comp. Sci. or related field & 2 yrs. exp.

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SYSTEMS ANALYST-International Telecommunications Data Systems, Inc. needs Systems Analysts for its Stamford, CT office to analyze and develop telecommunications software. These positions require a masters degree in Math, Computer Science, Engineering or a related discipline and two yrs. exp. in the job offered or in a software development occupation. Must have exp. with C/C++, UNIX and Windows OS, which may be attained through education or employment. Send resume to: ITDS, Box AK, 1390 Timberlake Manor Parkway, Chesterfield, MO 63017, Att: K. Madsen.

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Associate Computer Systems Engineer wanted by Computer Consulting Firm in New York, NY. Must have Bach in Mgmt, Info Systms or Comp Sci & 1 yr comp exp.

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* SYSTEMS ANALYSTS
with any of the following skills:
* WEB Development Background
* OBJECT ORIENTED DESIGN
* CMM LEVEL II
* UNIX SYSTEM ADMINS
with Sun Solaris

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We'll provide you with a stimulating supportive environment, attractive salaries and benefits including: Tuition Reimbursement, 401K Savings Plan Company Matched, Life, Health, Dental Plan, On-Going Technical Training and Employee Assistance Program.

Please forward your resume to: Tom Culmone, Staffing Manager, Dept 0918 COMPUTER HORIZONS CORP. 49 Old Bloomfield Avenue, Mountain Lakes, New Jersey 07046-1495. call 973-299-4000 or 1-800-321-2421. Fax: 973-331-1632. E-mail: jobs@computerhorizons.com (in MS Word format only, please). An Equal Opportunity Employer M/F.

Software Engineers

At Atlantis Interactive, an Internet and customer service solutions company, we work to take Internet projects from prototype to launch. Striving for excellence in the design and development of highly customized web sites, we change the way business is done over the Internet.

Due to our growth, we are in need of Software Engineers. In this role, you must have significant technical experience with excellent communication skills and an enthusiastic and entrepreneurial personality. Ideal candidates will be well versed in object oriented software engineering, software architecture, Com/D Com, Java, C++ and Oracle Development.

We offer exciting and competitive compensation and benefit packages. Only qualified applicants will be contacted. Interested candidates should forward their resumes to **Human Resources, Attn: Garry Randall, Walker Digital Corporation, Five High Ridge Park, Stamford, CT 06905.** No phone calls please. An Equal Opportunity Employer. M/F/D/V.

Atlantis Interactive

CONSULTANTS-Consultants have multiple responsibilities related to the unique business and computer needs of Bondi's clients. Consultants develop and maintain unique computer systems, analyze the client's particular business processes and decide how best to automate or reengineer existing applications, and then program, design, and provide technical documentation, technical research, training and mentors/skills transfer services to that client. Consultants analyze and determine how work assignments are to be processed and completed. Consultants solve technical problems, suggest alternative courses of action, explain the benefits and drawbacks of each, and recommend the best solution to the client. Consultants identify best applications from which to choose for a variety of programming and design needs, in the context of options available for the particular client. Consultants interact with other Consultants within the Bondi team. Position requires BS in Computer Science or a related discipline and two (2) years of consulting/development experience working on business applications. 8-5 M-F. Send resume and Social Security number to Michael Shemancik, Chief Operating Officer, Bondi Software, Inc., 3150 North Elm Street, Suite 103, Greensboro, North Carolina 27405

Systems Consultant
Provide services to clients in design & development of multi business applications to support client-server systems, develop modules, modify, test, & implement systems, working with Digital Alpha Servers, IBM compatibles, Unix, Oracle, Oracle* Forma, Oracle* Reports, Oracle* Financials, SOL* Plus, PL/SOL, SOL & Windows NT. $62,920/yr. 40hrs/wk. B. S. in Computer Sc., or Computer Eng, Math, or Electrical or Electronics Engineering req'd. 2 yrs. exp. req'd. in job offered or 2 yrs. related exp. as Systems Analyst or Software Eng. Related exp. must include use of noted skills in job duties. Will work at unanticipated locations in the U.S. Submit 2 resumes or apply to the GA Dept. of Labor, 2943 N. Druid Hills Rd., Atlanta, GA 30329-3909 or the nearest Dept. of Labor Field Service Office. Job Order #GA6736150.

Software Engineer: Researches, designs, and develops customized computer software in a object-oriented environment. Software controls company produced hardware used in the manufacture of semiconductors. All software developed using object oriented technology, C/C++ and running in real-time. Software will include image processing, computer vision, step motors and other electrical or electronic device controls. Designs and develops software system testing procedures, programming and documentation. REQUIREMENTS: Masters Degree in CS/EE plus 3 years experience and or Bachelors and 5 years of progressive experience in the job offered or related occupation of (software development in an educational or industrial research). Experience must include C/C++, Object oriented methodology and real-time software. 40 Hrs/wk from 8am-5pm, Salary: $65,550.00/year. Please send resume to: Job Order #2000-409, P.O. Box 989, Concord, NH 03302-0989.

Ascom Transport Systems, Inc. is seeking to fill the following positions:

Database Administrator: (Position located in Newark, NJ) Maintain 12 Oracle Database servers & 50 client Workstations for Revenue Control Systems at Newark, JFK & LaGuardia airports utilizing various Oracle products (Diagnostic Pack, Tuning Pack, Replication Manager, Enterprise Manager, etc.); Database activities include: troubleshooting, backup, recovery work & tuning databases for performance; Analyze, design, develop, test implement & support of new Oracle Database related developments. Required: Master's degree in Comp. Sci. or related Engineering discipline, plus 2 yrs. exp. in job duties or 2 yrs. exp. as an Oracle Database Administrator(including supervisory responsibilities). In lieu of Master's will accept Bachelor's in Computer Science or related Engineering discipline + 5 yr. exp. in related job duties.
Sr. Software Engineer: (Position located in Norcross, GA). Responsible for design, enhancement & maintenance of airport-parking System (PRCS) for major int'l airports; Enhance, tune, administer & reorganize Oracle database; Configure NT services (primary & backup domain); Configure NT workstations; Train users; Liason with user group; Create, enhance & maintain design specs, system design documentation; Implement & integrate systems onsite. Required: Master's degree or equivalent in Comp. Sci. field, plus 2 yrs. exp. in the job offered, or 2 yrs. exp. as a software engineer or systems analyst (must include Platform and database migration and conversion from & to ORACLE & supervisory responsibilities). In lieu of Master's will accept Bachelor's in Comp. Sci. or related Engineering discipline + 5 yr. Exp. in related job duties.

Ascom Transport Systems, Incorporated offers competitive salaries and an excellent benefits package. For confidential consideration, Submit resume to: Peter Sands, President, Ascom Transport Services, Inc., 3100 Medlock Bridge Road, Norcross, GA 30071.

PC Development Infrastructure Analyst wanted by Greenwich Capital Markets, Inc. for engagements involving system design and architecture. Develop technical specifications and design policies, procedures and workflows and also conduct tests, review controls and implement systems. Develop and direct testing procedures, programming and documentation. Analyze specific development tools to decide on functionality and suitability. Consult with managerial and systems analysis personnel to insure PC infrastructure meets demands and works within infrastructure guidelines. Revise or direct revisions of existing programs to increase operating efficiency or adapt to new requirements. Conduct day-to-day problem solving at both the end-user and developer levels. Train subordinates in programming and program coding. Bachelors degree in Computer Science or Information Systems and 3 years experience in the job or 3 years experience as a Programmer/Analyst or Technical Support Analyst involved with PC Infrastructure Development, Financial Services. Alternatively, the employer will accept 5 years of progressively responsible experience in the job or related occupation in lieu of the Bachelor's degree and 3 years experience. Send resume to: Dave MacWilliams, 600 Steamboat Rd., Greenwich, CT 06830.

MANAGEMENT ANALYST/STRATEGIST-NY,NY Strategist to identify, direct, & implement e-business plans & to develop & provide leadership to clients & staff of IT prof'l svces co. Analyze client business processes & goals & recommend operational improvements using IT. Provide identification & analysis of work flows & design application developer specs. Direct business process re-engineering projects, & undertake localization & optimization & strategies. Work w/teams to create new visions for marketing businesses through e-commerce. 2yrs exp. w/leading IT svces co. in localization strategies & global business initiatives. 3yrs exp. software development. Proven ability to write technical specs, contribute to new business development efforts & prep. marketing & business plans. Strong communication skills a must. 2yrs eCRM exp. BS or BA in Business Admin., Industrial Engnrg or Comp. Sci. E-mail resume to: rkuhn@redsky.com or fax to (212) 686-3060

Computer Scientist Data Mining

A Charlotte Financial Information Services Company has an opening for a Computer Scientist-Data Mining. This position will design and implement intelligent data mining systems that extract information from electronic sources of financial data. Consult with financial analysts to translate thier experience into heuristic rules of data mining. Track latest technology, innovations and standards in financial data mining. Develop in Windows NT, SOL server and Delphi environment. Requires a BS in Computer Science or Applied Mathematics and three years experience in job or as research assistant. Required experience must include heuristic research and applications. The company will not pay for relocation. Send resume to HR Director, 5250 77 Center Drive, Suite 150. Charlotte, NC 28217. EOE M/F/D/V.

Full-time Programmer Analyst. To design, develop, test, implement, maintain and support client/server based software system & database for business application using Visual Basic, Magic, Oracle, on Windows NT/98. RDBMS, Magic software, and web authoring. Will evaluate program's needs of user and consult with user to identify operating procedures in programs objective write code, test programs for logic and syntax error, correct code, train user, tuning Magic application performance. Must have a Bachelor's degree in Computer Science (foreign degree accepted). Must have 3 yrs experience in job offered or a position with the same duties. Salary: $59,774/yr. Send resume to: Nanda Chheda, American Megatrends, Inc., 6145-F Northbelt Parkway, Norcross, GA 30071.

Technical Support Service Manager
Research system hardware solutions to ensure compatibility & future expansion; provide user training, upgrade internal system, prepare system documentation & training materials; work w/ manufacturer & vendor to analyze & solve computer systems & peripheral product problems; support DOS/Windows 3.1, Windows 95/98, Windows NT Workstation/Server, Windows 2000 Professional Server & Linux syst. on syst. setting & hardware trouble shooting; promote maintenance through response service toward customer's request. Must have BS deg. in C.S. & 1 yr. exp. in ad. pos. or related w/ ability to research syst. hardware solutions to ensure compatibility & future expansion; analyze & solve computer systems & peripheral product problems; trouble shoot systems running DOS/Windows 3.1, Windows 95/98, Windows NT Workstation/Server, Windows 2000 Professional/Server & Linux. Must have A+ Cert. 40.0 hr/wk. $45,000.00/yr. 9:00 AM-6:00 PM. Applicants send resume to: Mr. Ernest Lee, General Manager, HIQ Technologies, Inc., 5600 Oakbrook Parkway, Suite 260, Norcross, GA 30093.

Multiple positions for IT professionals w/NJ based IT firm as following:

Software Engineers: Masters in CS or Eng, Math, MIS or Eqv. w/2 yrs exp as Soft. Eng. or as Programmer Analyst or a Bachelors in CS, Eng, Math, MIS or Eqv. w/5 yrs exp as Soft Eng. or as Programmer Analyst.

Programmer Analyst: Bachelor's in Eng/CS/Math/MIS or Eqv. & 1 yr exp in the job or as Systems Analyst.

Various skills combinations reqd: Sybase, Power Builder, MS-SQL, Oracle, Visual C++, Windows NT, Java etc.

Apply w/2 copies of resume to HR Dept, Cimtech, Inc, 200 Middlesex Turnpike, #305, Iselin, NJ 08830

Sr. Systems Analyst
Provide services to clients involving design & development of multi real-time applications to support client – server systems &information; d/redesign & modify current systems to comply with year 2000 data requirements & volume growth; test & implement applications, working with WindowsNT, Unix, SQL Server, Oracle, Presentation Manager, JAVA, C++, Visual Basic, MFC (Microsoft Foundation Class), Windows SDK & Object Oriented technology. $62,920/yr. 40 hrs/wk. B. S. in Computer Sc., or Computer Eng, Math, or Computer Applications req'd. 2 yrs. exp. req'd in job offered or 2 yrs. related exp. as Systems Engineer or Software Consultant. Related exp. must include use of noted skills in job duties. B. S. may be foreign equivalent degree. Will work at unanticipated locations in the U.S. Submit 2 resumes or apply to the GA Dept. of Labor, 2943 N. Druid Hills Rd., Atlanta, GA 30329-3909 or the nearest Dept. of Labor Field Service Office. Job Order #GA 6736134.

INFORMATION TECHNOLOGIST: Int'l Specialty Products, one of the world's premiere specialty chemical companies, encompassing all aspects of chemical prod. & sales incl. manufacturing & research facilities, is seeking an Information Technologist to analyze, design, code, test, enhance, maintain & document AS/400 applications. Qualified applicants will have a Bachelor degree in Computer Science or a related discipline & have 5 yrs of related exp w/extensive knowledge of RPG, CL, QUERY, SOL, MRC & AS/400. Send resume to: Ms. Irene Coontz, Int'l Specialty Products, 1361 Alps Road, Wayne, NJ 07470.

Full-time Junior Software Engineer. Responsible for new technology-related BIOS projects and assisting in the development of application and test tools for technology projects as well as diagnostics, test suites in C/C++, and assembly for testing and debugging. Performs BIOS customization and porting, isolates BIOS problems. Releases, debugs, and maintains BIOS. Develops Windows NT, and programming. Must have a Bachelor's degree in Computer Science, Electronics Engineering, related field, or foreign degree equivalent. Must have 1 year of experience in the job offered or a position with the same duties. Educational or work background must have included Oracle, RAID, Microprocessors 386/486, Assembly Language, BIOS and pentium. Salary: $59,774. Send resume to: Nanda Chheda, American Megatrends, Inc., 6145-F Northbelt Parkway, Norcross, GA 30071.

Foreway Technologies Inc, a NY IT Co. is looking to fill the following positions at their work sites in NY:

Programmer Analyst/Software Engineer-Bach deg in engg (any), math, sci & 2 yrs exp in job (or) 5 yrs exp in job. Will accept Bach deg + 5 yrs exp in field. Prefer exp in the following skill sets: Oracle, Dvlpr 2000, Unix, WinNT, SOL.

Programmer Analyst-bach deg in any field & 2 yrs exp in job. Prefer exp in the following skill sets Oracle, Dvlpr 2000, Unix, WinNT, SOL

Software Engineer-Masters & 1 yr exp Analyze, dsgn, dvlp applic systms using skill combo in sets Oracle, Dvlpr 2000, Unix, WinNT, SQL

Send resumes to Foreway Technologies, 76 N. Broadway, Hicksville, NY 11801-2909.

IT careers

Full-time BIOS Engineer responsible for initializing memory controller, cache controller, various I/O and Super I/O controllers, PIC and I/O APIC controllers, DMA controllers, ISA/EISA/PCI bus controllers and bridges. Develop utilities and drivers using C/C++, and Intel 80x86 assembly languages. Design and develop hardware management and hardware communication routines for different types of hardware. Work on debugging, testing, problem analysis, software design and development. Must have a Bachelor's degree in Computer Engineering or related field. Foreign degree equivalent accepted. Must have two years of experience in the job offered or in a position with the same duties. Salary: $58,234/yr. Send resume to: Nanda Chheda, American Megatrends, Inc., 6145F Northbelt Parkway, Norcross, GA 30071.

SVI AMERICA CORP. is an information management & technology consultancy co. with offices throughout the US. We work with many organizations to develop integrated solutions that transform their enterprises. By understanding the key components that drive an organization, we are providing tangible results & a competitive advantage to our clients.

SVI America Corp. presently requires Programmer Analysts with the following qualifications: A Bachelor's degree in Comp Sci, Math, Eng'g, Business Admin. or a related discipline, 1 yr exp in job offered, and working knowledge of Visual Basic, RDBMS & SOL. Must be willing to temporarily relocate to client sites throughout the U.S.

To apply, please contact: HR Dept., SVI America Corp., 15800 John J. Delaney Drive, Suite 250, Charlotte, NC 28277 or E-mail: jobs@sviamerica.com

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ORACLE Applications Database Administrator

Kaplan, Inc. is the world's premier provider of educational products and services. Currently our company seeks an ORACLE Applications Database Administrator. Qualified applicants must have a BS degree in Computer Science, Engineering or rel. disc, & 3 yrs exp in job offered or as a DBA, soft eng., or in a rel. occ. Must have exp w/UNIX, SQL, and ORACLE products incl. ORACLE Financial, Enterprise Manager, Network Manager, Replication Manager, and Server Manager. Send Resumes to: Ms. Preeti Torres, Kaplan Educational Centers, 888 Seventh Ave., 21st Floor, New York, NY 10106.

IT Careers in Texas

There's no place like Texas. It's a rich mix of tried and true tradition, where humble people close a deal with a handshake, and where the most advanced of technologies are born and bred.

The IT career market continues to expand, circling on key cities such as Austin, Dallas and Houston. But don't overlook the small metro areas, where new businesses are growing and technology is stretching to meet new demands and work in entirely new ways.

Cidra Corp.
Houston, TX

Mix leading-edge technology with the oil industry, and there's bound to be a gusher of opportunity. Cidra Corp. in Texas designs and manufactures fiber-optic sensing systems for the oil and gas industry. The corporation's operations in Connecticut design and manufacture tunable devices and components for the telecommunications industry.

Founded in 1996, Cidra's optical-sensing technology is being put to work for customers such as BP Amoco. "Our fiber-optic sensing equipment has taken the place of the copper tube that previously was snaked down during drilling," explains Kieran Portley, technical recruiter. "We capture the data to determine such factors as the oil-to-water ratio and what's going on below the surface."

Portley is looking for IT professionals with experience in C, C++, DCom, MSC and data warehousing. Specifically, he will be hiring a senior technical team leader and a requirements test engineer. "Communication skills will be important because we are working with engineers who know down-hill drilling. We're helping them define requirements and applying technology to those requirements.

"Cidra is developing and manufacturing state-of-the-art technology and products, so our employees have the opportunity to work with the latest software, systems and middleware," Portley said. "Our company is employee-owned – every employee has stock options. As a result, throughout Cidra you feel a strong sense of passion and commitment for the technology we develop and the products we deliver our customers and partners."

ThruPoint
Dallas, TX

ThruPoint, headquartered in New York and founded in 1996, now has offices to serve the Southwest in Dallas, Houston and Phoenix. The company provides advanced inter-networking solutions and services to help clients design, deploy and manage their computer networks.

"Our clients are primarily large, global companies that are sophisticated, early adopters of new technology and that view their networks as a critical part of their overall business strategy," explains John Trebisky, regional recruiter. Both Morgan Stanley Dean Witter and Cisco Systems hold a stake in the company, which is in pre-IPO operation. ThruPoint also has offices in London, Amsterdam and Frankfurt.

"By providing network engineers to our customers, we assist them with security audits, network design and implementation of large network systems," says Trebisky. The company hires all engineers on a full-time basis, and stock options are awarded as part of becoming an employee.

In addition to providing professional staff to Morgan Stanley, the company's Texas clients include Enron and Cisco. "Typically we do projects, working with the CIO to resolve business problems, build prototype models and then build the network. We need people who have strong analytical skills, project management and communication skills.

"We're also looking for Cisco certifications, particularly the CCIE," says Trebisky. "That's considered the doctorate in Cisco network technologies, and there are only about 4,000 such folks in the world. While we seek that level of expertise, we also hire people who may have some certification or none, but who are willing to work toward that goal."

Trebisky says ThruPoint does three things that attract engineers and keeps them with the firm. "We pay people well," he explains. "Our base salary is in the 90th percentile of the market. We also offer year-end bonuses and discretionary stock bonuses on the quarter. Secondly, we offer the opportunity for training. Each engineer sits down on day one and completes a structured training plan. And lastly, we give ownership to people who work here."

For more job opportunities in Texas, turn to the pages of IT Careers.
If you'd like to take part in an upcoming IT Careers feature, contact Janis Crowley, 650.312.0607 or janis_crowley@itcareers.net.
Produced by Carole R. Hedden • Designed by Aldebaran Graphic Solutions

SYSTEMS ANALYST (Dallas, TX) to evaluate and design existing or proposed systems to structure and access data bases; Direct and control the activities related to data planning and development and the establishment of policies and procedures pertaining to its management; Analyze data base requirements of the user, applications programs, and operations; Submit recommendations to management for solutions which require definition of the physical structure and functional capabilities of data bases and require data security and data backup/recovery specifications; Project long-range requirements for data base administration in conjunction with other areas in the data processing function; Propose detailed specifications and flowcharts as well as coordinate and install revised or new systems; Technical skills to be utilized include Oracle, MS SQL Server, MS Access, SQL, PL/SQL, Visual Basic, Unix Shell Scripts, Erwin, SQL Navigator, SQL*Plus, Oracle Enterprise Manager and Visual Source Safe. Require: Associate's degree in Computer Science, Information Systems, or a closely related field with 3 years of experience in the job offered. Extensive travel on assignment to various company and client sites within the U.S. is required. Salary: $75,000/year; 8:30 am to 5:30 pm M-F. Send resume to: Elizabeth Haney, Assistant VP, MYND, One MYND Center (Int. of I-77 & US 21N), Blythewood, SC 29016, Attn: Job GB.

Software Engineer. Location of Job: Cincinnati, OH. Duties: Perform software development including project managment. systems study, database design and appliations development and fine tuning using Oracle, Weblogic Enterprise, CORBA, Tuxedo, UNIX C++, Java, Purify 4.1, Roguewave Tool ++, and Sun Workshop 3.0. Responsible for the evaluation of requirements, estimating, designing, coding and testing new or modified enhancements and/or integration with existing products using Visual C++, CORBA and Java. Perform maintenance and provide support for software. Requires: M.S. in Comp. or Info. Science, Eng. or related field & 3 yrs. exp. in the job offered or 3 yrs. exp. as a Prog/Analyst, System Eng. or Info Tech. Eng. In lieu of M.S. & 3 yrs. exp., will accept B.S. & 5 yrs. of progressive exp. in the computer ind. Exp., which may have been obtained concurrently, must incl 3 yrs. exp. using Visual C++. EOE. 40 hrs./wk.; 8:00 a.m. to 5:00 p.m. Salary: $70,227/yr. Send resume (no calls) to: Robert Miller, CTG, Inc., 312 Plum St., Suite 700, Cincinatti, OH 45202.

Internet Applications Developer. Design & implement active server pages using object-oriented technology. Implement new COM based programs to communicate with legacy systems. Program active UNIX Oracle database connections to Windows NT Internet based web servers. Design & implement security mechanisms for Internet & Intranet sites. Tools: Oracle, ODBC, SQL Net, UNIX, Windows NT, IIS, Site Server, JavaScript, VBScript, C++, VB, COM/DCOM. MS in Comp. Sci.* + 1 yr exp in job offered or as Systems Analyst req'd. (*Will accept Master's degree in applied science or any engr. field.) Education or exp must include UNIX & creating web pages using object-oriented technology. 40 hrs/wk, 9am-5pm, $62,000/yr. Must have proof of legal authority to work permanently in the U.S. Send 2 copies of resume & cover letter to Illinois Dept. of Employment Security, 401 S. State St.-7 North, Chicago, IL 60605. Attn: Brenda Kelly. Ref# V-IL 23911-K. Employer Paid Ad. No calls.

Emerald Solutions, Inc
Seeking IT professionals to join our NATIONAL consulting firm.

Programmer Analysts:
Must have a Bachelor's Degree in Computer Science or related field or the equivalent education and experience.
Software Engineers:
Must have a Bachelor's Degree in Computer Science or related field and a minimum of 5 years related progressive work experience.

We have offices in Birmingham, AL, Phoenix, AZ, San Jose, CA, Walnut Creek, CA, Denver, CO, Stamford, CT, Alpharetta, GA, Boston, MA, Warren, NJ, New York, NY, Portland, OR, Dallas, TX, Vienna, VA, and Bellevue, WA.

Send resume, including location preference to:
Emerald Solutions, Inc.
Ref#CWAD09
111 SW 5th Ave., #2700
Portland, OR 97204
E-mail:
cwad09@emeraldsolutions.com
EOE

Call your ITcareers Sales Representative or Janis Crowley. 1-800-762-2977

Applications/System Architects: Positions available in our New York, New York City, Chicago, San Jose, San Francisco and Nashville area offices. Will work with exceptional teams of computer and business professionals participating in full life-cycle development of distributed, object-oriented applications. Will design, develop and implement enterprise wide, distributed applications in various OO, client/server, n-tier environments against various relational databases. Will utilize OO languages, including Forte and Java and relational databases such as Informix, Oracle, Sybase, MS SQL Server, and DB2. Will lead development teams. Requirements: Master of Science degree in Computer Science, Computer Engineering or Electrical Engineering, or related field, or foreign equivalent. Bachelor's degree in Computer Science, Computer Engineering or Electrical Engineering or related field or foreign equivalent, plus five years of experience, which must include experience in programming with an object-oriented programming language; If interested, please email your resume and cover letter to jobs@thoughtworks.com.

Applications Developers: Positions available in our New York, Chicago, San Jose, San Francisco and Nashville area offices. Will work with exceptional teams of computer and business professionals participating in full life-cycle development of distributed, object-oriented applications. Will design, develop and implement enterprise wide, distributed applications in various OO, client/server, n-tier environments against various relational databases. Will utilize OO languages, including Forte and Java and relational databases such as Informix, Oracle, Sybase, MS SQL Server, and DB2. Requirements: Bachelor's degree in Computer Science, Computer Engineering or Electrical Engineering or related field, or foreign equivalent. If interested, please email your resume and cover letter to jobs@thoughtworks.com.

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Business Analysts: Positions available in our New York, New York City, Chicago, San Jose, San Francisco and Nashville area offices. Will work with exceptional teams of computer and business professionals participating in full life-cycle development of distributed, object-oriented applications. Will apply OO analysis and design methodologies and object modeling techniques to design OO applications. Will be responsible for working with users to define system requirements. Will translate those requirements into clear and precise specifications for the developers to implements. Will design screens, write use cases, design and perform system testing. Requirements: Bachelor's degree in Business, Finance, Computer Information Systems or related field, or foreign equivalent. If interested, please email your resume and cover letter to jobs@thoughtworks.com.

Senior Software Engineer: Design, develop and implement software systems to determine feasibility of design and directs software testing procedures, programming and documentation. Work involves extensive travel and frequent relocation. Must have one year of experience using SAP. Masters degree in Computer Science/Applications, Engineering, Chemistry, Math, Physics or a business related field. Will accept Bachelors degree, or foreign equivalent, with five years of progressive experience as computer professional. Salary is $100,000 per/yr, 40 hrs/wk., 9:00-5:00 p.m. Please submit resumes to: Mr. Thomas C. Dembosky, Manager, Indiana Job Center, 350 North Fourth Street, Indiana, PA. 15701-2000 Job Order No.: WEB 122750.

Software engineer to design, develop and test computer programs for business applications; analyze software requirements to determine feasibility of design; direct software system testing procedures using expertise in Visual C++, Oracle, C++ and MFC. Requirements: Bachelor's Degree or equivalent in Computer Science or related field and five years experience as a software engineer or computer programmer, knowledge of Visual C++, Oracle, C++ and MFC. Salary: $104,000/year. Working Conditions: 8:00 A.M. to 5:00 P.M., 40 hours/week, involves extensive travel and frequent relocation. Apply: Mr. Terry N. Faust, Washington County Team PA CareerLink, Millcraft Center, Suite 150LL, 90 West Chestnut Street, Washington PA, 15301-4517, Job No. WEB122730.

Software Engineer (multiple openings): Design, develop and implement computer software systems using PeopleSoft and related software. Work requires extensive travel and frequent relocation. Must have 1 year in the job offered or as a computer professional and 1 year of experience using PeopleSoft and related software. Bachelors degree in Computer Science/Applications, Engineering, Math, Physics, Chemistry or business related field. Salary is $85,000.00 per year, 9am @ 5 pm. Send resumes, referencing Job Order WEB 177760, to Mr. Terrance Kinney, Manager, Armstrong County Team PA Career Link, 1270 N. Water Street, P.O. Box 759, Kittanning, PA 16201-0759.

SOFTWARE ENGINEER to design, develop, test, implement and support application software in an OLTP environment using object-oriented analysis and design, C++, RogueWave Tools.h++, Rational Rose, MQSeries, DCE, Encina++ and configuration management systems under UNIX operating systems. Require: M.S. degree in Computer Science, or a closely related field, with two years of experience in the job offered; Experience gained before or after earning the M.S. degree will be accepted; Extensive paid travel on assignment to various client sited within the U.S. is required. Salary: $68,000 per year, 8:00 am to 5:00 pm, M-F. Apply by resume to: Naga R. Pokala, V.P., Kusuma Software Inc., 413 Thistle Court, South Lake, TX 76092; Attn: Job RV

Business Analysts: Positions available in our New York, New York City, Chicago, San Jose, San Francisco and Nashville area offices. Will work as team leaders with exceptional teams of computer and business professionals participating in full life-cycle development of distributed, object-oriented applications. Will apply OO analysis and design methodologies and object modeling techniques to design OO applications. Will be responsible for working with users to define system requirements. Will translate those requirements into clear and precise specifications for the developers to implements. Will design screens, write use cases, design and perform system testing. Requirements: Master's degree in Business, Computer Information Systems or related field, or equivalent. If interested, please email your resume and cover letter to jobs@thoughtworks.com.

Software engineer to design, develop and test computer programs for business applications; analyze software requirements to determine feasibility of design; direct software system testing procedures using expertise in Swing, Java, DB2 and JavaScript. Requirements: Bachelor's Degree or equivalent in Computer Science or related field and two years experience as a software engineer or computer programmer, knowledge of Swing, Java, DB2 and JavaScript. Salary: $66,000/year. Working Conditions: 8:00 A.M. to 5:00 P.M., 40 hours/week, involves extensive travel and frequent relocation. Apply: Ms. Sue Notarnicola, Fayette County Team PA CareerLink, 32 Iowa Street, Uniontown, PA 15401-3513, Job No. WEB122727.

Software Engineer: Norcross, GA opening to design security frameworks & propose solutions to internet-based projects. Maintain/improve existing productions, develop new productions using VJ &VC on WinNT, Java2 & C/C++ on HPUX w/UML, XML, WAP/WML/WML Script, EJB/JSP/servlet, CORBA, SSL, SET. SNMP, IPSec/VPN. TMN, JDBC & Oracle8i. Req. M.S. in C.S. or other closely related field plus 1 yr software dvlpmt exp. w/above skills. Resume to: HR Manager, Cyber Object Corp. at 3050A Business Park Dr., Norcross, GA 30071.

Programmer Analyst. Analyze, design, develop, test, implement and maintain client server Oracle Financials and Applications. Demonstrated ability working with Oracle Financial Applications such as GL, AP, AR, Inv. and AOL. Demonstrated ability working with PL/SQL, Developer 2000 (Forms & Reports), C, Java. Demonstrated ability working on multiple platforms such as Unix, Windows NT, Novell Netware. $39,600/yr. 40 hr/wk. 9 a.m. - 5 p.m. Must have 2 yrs. exp. and B.S. Comp. Sci., Eng. rel. field/equiv. Send 2 copies of resume: Job Order #2000-360 P.O. Box 989, Concord, NH 03302-0989

ART DIRECTOR - req: BA in Computer Sci or Software Eng.; 3 yrs exp. or 3 titles exp. (games industry); fluency in 3D Studio Max TECHNICAL DIRECTOR - req: BA in Computer Sci or Software Eng.; 5 yrs exp. in job or 3 yrs as Software Eng (games industry); fluency in "C" & MIPS' exp. with 2D and 3D prog. Send resume to Lucky Chicken Games , 321 Santa Monica Bl, 3rd Fl. Santa Monica, CA 91401

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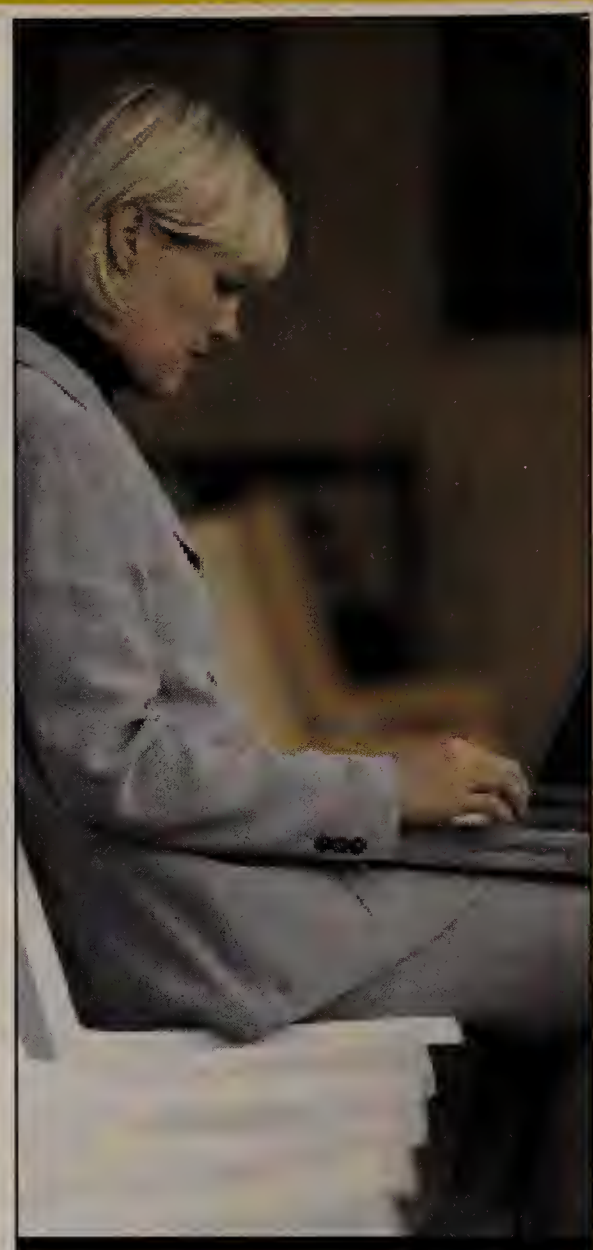

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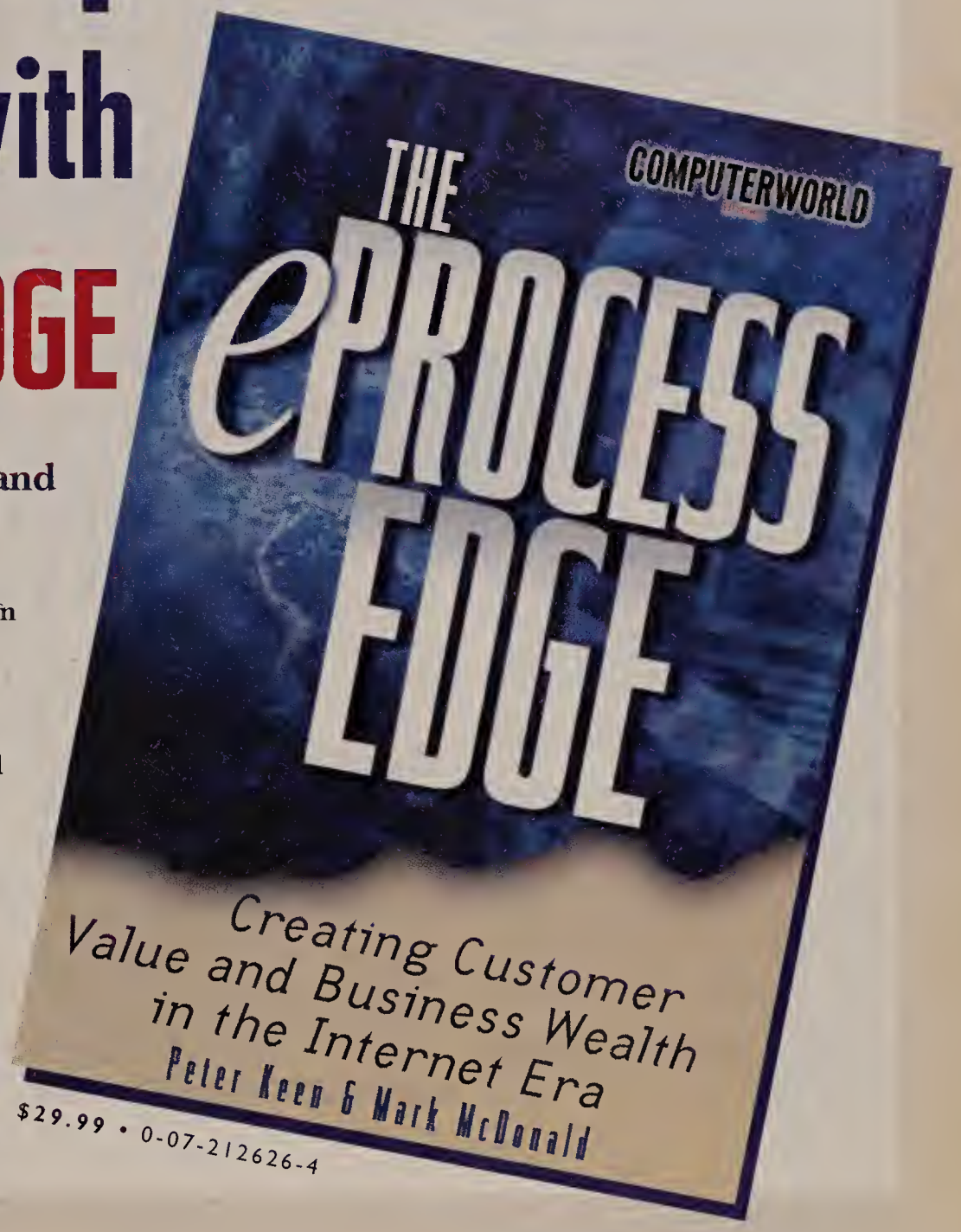

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Mark McDonald *is an associate partner and director of Andersen Consulting's Center for Process Excellence.*

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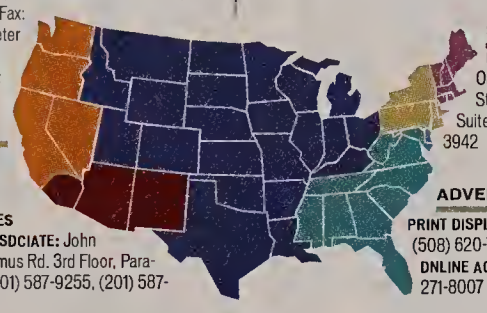

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Andrew Corp.	12.3
SunGard Data Systems Inc. (H)	11.8
BCE Inc. (L)	11.6

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DOLLAR

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Analysts: Web Ad Revenues to Improve

Declines attributed to fizzling dot-coms

BY TODD R. WEISS

TIMES HAVE certainly been tough lately for firms earning key revenues through online advertising, but if they can weather the recent storm, better days do lie ahead, according to analysts.

Since the spring, when the stock market endured a jarring correction, three key online industry players — Yahoo Inc. [Nasdaq:YHOO], DoubleClick Inc. [Nasdaq:DCLK] and Engage Inc. [Nasdaq:ENGA] — have seen their stocks fall as ad revenues have plummeted.

INDUSTRY ALMANAC

Yahoo in Santa Clara, Calif., saw its stock fall from a high of 200 3/4 points per share on March 27 to 107 on Sept. 12. DoubleClick in New York saw its share price fall from a high of 117 5/8 on March 10 to 37 13/16 on Sept. 12, while Engage in Andover, Mass., dropped from a high of 92 1/2 on March 1 to 9 15/16 on Sept. 12.

Jeff Fieler, an analyst at Bear, Stearns & Co. [NYSE:BSC] in New York, says the fall in ad revenues is directly linked to the drop in the market and has less to do with other issues such as privacy concerns.

Rich Petersen, an analyst at Credit Suisse First Boston in New York, says he agrees, adding that the failure of many dot-coms has hurt online ad revenues as the companies have dropped out of the picture. But as new dot-coms and many traditional retailers new to the Internet begin to come forward, online advertising will again pick up its growth trend, he says.

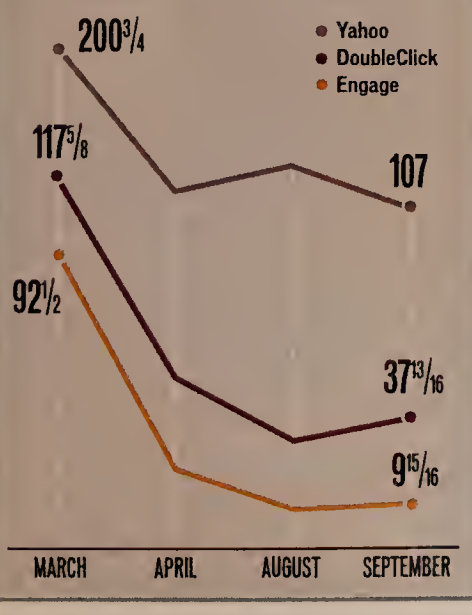
Mark Mahaney, an analyst at Morgan Stanley Dean Witter & Co. [NYSE: MWD] in New York, says he expects improved online ad revenues by early next year as a larger pool of traditional retailers joins the fray, taking up the slack from failed dot-coms.

But Jack Stafs, chief economist at Zona Research Inc. in Redwood City, Calif., says that while failed dot-coms have led to much of the recent advertising downturn, the privacy issue is one to watch. The concern, he says, is from consumers who are leery about sharing personally identifiable information when clicking on ads.

"They're afraid that something is going to happen with the information," Stafs says. "More often than not, when you click on these things, they ask for information."

It Doesn't Ad Up

Online advertising company stocks since March (price per share):



EXCH	52-WEEK	RANGE		SEPT. 15 2PM	WK NET CHANGE	WK PCT CHANGE
SOFTWARE OFF -2.3%						
ASWX	149.12	11.00	Active Software	50.56	0.00	0.0
ADBE	143.31	47.53	Adobe Systems Inc.	133.50	-2.44	-1.8
AR8A	183.34	29.96	Ariba Inc.	154.88	-4.63	-2.9
AZPN	55.37	8.12	Aspen Technology Inc.	46.88	3.13	7.1
ADSK	56.06	17.00	Autodesk Inc.	29.06	0.19	0.6
AVID	25.56	8.75	Avid Technology	13.50	-2.00	-12.9
BAANF	16.25	1.12	Baan Co. N.V.	2.25	-0.09	-4.0
BMCS	86.62	16.12	BMC Software Inc.	20.13	-4.38	-17.9
BO8J	150.87	21.18	Business Objects S.A.	106.88	4.44	4.3
CDN	27.25	12.81	Cadence Design Systems (H)	27.25	5.44	24.9
CHKP	160.00	19.31	Checkpoint Software Tech. Ltd. (H)	153.31	2.31	1.5
CTXS	122.31	14.25	Citrix Systems Inc.	22.13	-0.88	-3.8
COGN	46.50	9.68	Cognos Inc.	41.75	2.69	6.9
CA	79.43	23.68	Computer Associates Int'l Inc.	27.88	-3.88	-12.2
CPWR	40.00	7.50	Compuware Corp.	10.25	0.44	4.5
DCTM	106.00	14.62	Documentum	59.38	-18.38	-23.6
EFII	69.31	21.06	Electronics For Imaging	26.44	-0.06	-0.2
HNCS	130.00	34.62	Hnc Software	63.69	2.50	4.1
HYSL	65.00	15.31	Hyperion Software	28.50	-3.63	-11.3
IOXC	49.12	10.37	IOX Systems	17.00	0.31	1.9
INFA	110.87	22.50	Informatica Corp.	103.00	1.00	1.0
IFMX	21.25	3.68	Informix Software Inc.	5.41	-0.44	-7.5
INTU	90.00	22.68	Intuit	56.00	-3.75	-6.3
JKHY	54.50	16.12	Jack Henry Associates	46.50	2.63	6.0
JDEC	48.31	10.25	J.D. Edwards & Co.	26.31	2.00	8.2
LGTOE	82.50	8.12	Legato Systems Inc.	13.56	-1.38	-9.2
MACR	120.87	39.06	Macromedia Inc.	61.44	-2.56	-4.0
MANU	95.87	9.06	Manugistics Group Inc. (H)	92.00	3.94	4.5
MENT	22.87	7.75	Mentor Graphics (H)	22.00	1.38	6.7
MSFT	119.93	60.37	Microsoft Corp.	64.00	-5.75	-8.2
NETA	37.18	16.25	Network Associates	23.38	-0.25	-1.1
GMH	46.66	16.25	Network General	35.31	0.13	0.4
NOVL	44.56	7.87	Novell Inc.	10.06	-0.75	-6.9
ORCL	92.93	18.28	Oracle Corp.	80.50	-8.19	-9.2
PMTC	35.93	7.37	Parametric Technology Corp.	12.56	0.06	0.5
PSFT	37.87	12.00	PeopleSoft Inc. (H)	33.38	-0.03	-0.1
PIXR	50.37	31.31	Pixar	33.00	0.13	0.4
RATL	64.75	13.56	Rational Software Corp.	57.88	-1.88	-3.1
RHAT	151.31	15.00	Red Hat Inc.	21.44	-3.31	-13.4
QSFT	98.12	18.00	Quest Software	56.00	-1.88	-3.2
SAP	85.93	32.50	SAP AG	58.69	-4.81	-7.6
SCUR	29.62	2.50	Secure Computing Corp.	26.31	0.28	1.1
SORC	19.00	8.81	Structural Dynamics Research	16.38	-0.06	-0.4
SYBS	31.00	10.18	Sybase Inc.	25.25	-1.81	-6.7
SYMC	81.62	30.43	Symantec Corp.	47.38	0.19	0.4
SNPS	75.82	25.93	Synopsis	37.31	-0.06	-0.2
SCTC	28.37	10.00	Systems & Computer Technology	18.31	0.19	1.0
TIBX	147.00	8.87	Tibco Software Inc.	85.31	-13.44	-13.6
TSAI	48.12	11.37	Transaction Sys. Architects	16.31	-2.00	-10.9
VRTS	174.00	25.83	Veritas Software Corp.	120.34	0.72	0.6
WIND	66.12	15.56	Wind River Systems Inc.	47.75	1.25	2.7
TELECOMMUNICATIONS CARRIERS UP 1.1%						
AT	91.81	47.75	Alltel Corp.	50.88	-1.50	-2.9
ANDW	42.06	11.18	Andrew Corp.	32.63	3.56	12.3
T	61.00	29.62	AT&T	32.38	2.38	7.9
BCE	137.50	21.00	BCE Inc. (L)	24.00	2.50	11.6
BLS	53.50	34.93	Bell South	37.94	-1.06	-2.7
BRW	41.06	16.31	Cincinnati Bell Inc.	25.81	-2.06	-7.4
CMCSK	57.68	27.87	Comcast	37.00	0.63	1.7
COX	58.37	33.43	Cox Communications Inc. (L)	33.63	-0.81	-2.4
GSTRF	53.75	5.81	Globalstar Telecom. Ltd.	11.31	1.63	16.8
NXTL	82.93	27.75	Nextel Communications	51.88	-2.69	-4.9
SPOT	74.25	28.25	Panamsat	31.44	-0.69	-2.1
QCOM	200.00	38.07	Quaicomm	66.00	2.38	3.7
SBC	55.50	34.81	SBC Communications	44.56	0.38	0.8
FON	75.93	28.06	Sprint Corp. (L)	28.25	-1.19	-4.0
TOS	137.00	69.62	Telephone and Data Systems	122.56	3.06	2.6
VIA	76.06	40.31	Viacom	65.69	-0.38	-0.6
WCII	66.50	19.87	Winstar Communications Inc. (L)	21.38	-1.69	-7.3
WCOM	61.33	29.19	WorldCom Inc. (L)	29.19	-0.81	-2.7
SERVICES OFF -0.2%						
ACXM	35.93	14.56	Acxiom Corp.	29.13	1.88	6.9
ACS	49.87	31.00	Affiliated Computer Servs	44.13	-0.25	-0.6
AMSY	44.37	14.00	American Mgt. Systems	17.94	-0.81	-4.3
AUD	64.43	39.06	Automatic Data Processing (H)	64.00	1.75	2.8
BSYS	78.50	41.37	Bisys Group Inc. (H)	75.00	-0.22	-0.3
CATP	27.00	5.43	Cambridge Technology Ptnrs	6.00	-0.19	-3.0
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FDC	57.68	37.37	First Data Group (L)	41.81	1.44	3.6
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IT	22.31	9.56	Gartner Group	14.25	1.00	7.5
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PER	27.93	8.87	Perot Systems Corp.	10.19	-0.25	-2.4
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SAPE	75.59	18.15	Sapient Corp.	45.38	-6.38	-12.3
SOS	40.75	16.87	Sungard Data Systems (H)	40.75	4.31	11.8
SYNT	20.93	7.87	Syntel Inc.	10.88	1.56	16.8
TECD	55.87	18.00	Tech Data	48.06	-3.19	-6.2
TENF	76.87	6.37	TenFold Corp. (L)	6.44	-0.38	-5.5
TSS	20.62	14.12	Total System Services Inc	16.69	-0.06	-0.4
TSAI	48.12	11.37	Transaction Sys. Architects	16.31	-2.00	-10.9
NETWORK OFF -3.4%						
COMS	119.75	12.50	3Com Corp.	16.50	-0.19	-1.1
ADCT	49.00	9.32	ADC Telecommunications Inc.	35.13	-1.31	-3.6
ANTC	61.25	23.25	Antec	26.56	-4.69	-15.0
CS	52.75	14.12	Cabletron Systems	32.63	-2.56	-7.3
CNEBF	6.43	1.43	Call-Net Enterprises	1.53	-0.16	-9.3
CSCO	82.00	32.53	Cisco Systems Inc.	60.44	-4.81	-7.4
ECIL	39.87	23.75	ECI Telecom	31.50	-0.38	-1.2
ENTU	150.00	18.31	Entrust Technologies Inc.	28.44	0.69	2.5
EPRE	40.56	6.06	ePresence Inc.	7.31	-0.63	-7.9
HRS	39.37	15.50	Harris Corp.	28.69	-0.44	-1.5
GMH	46.66	16.25	Hughes Electronics/GM	35.31	0.13	0.4
ERICY	26.31	7.43	LM Ericsson	18.25	1.19	6.1
JNPR	228.00	28.25	Juniper Networks Inc.	200.31	-4.69	-2.3
LU	84.18	36.06	Lucent Technologies (L)	36.81	-3.56	-8.8
MADGF	17.37	1.43	Madge Networks	4.31	-0.06	-1.4
NCDI	9.62	1.03	Network Computing Dev.	1.16	-0.25	-17.8
NWK	14.81	7.31	Network Equipment Tech.	11.13	0.38	3.5
NOK	62.50	20.04	Nokia Corp	43.75	1.13	2.8
NT	86.00	19.90	Northern Telecom Ltd.	71.25	2.19	3.0
PCTL	15.21	1.87	PictureTel	6.88	-0.75	-9.8
SFA	94.00	23.50	Scientific Atlanta	68.25	-1.63	-2.4
TLAB	77.25	41.81	Tellabs Inc.	54.81	1.88	3.5
VRLK	22.00	1.81	Verilink	7.75	0.13	1.6
WSTL	40.75	6.43	Westell Technology Inc.	15.38	1.31	9.3
SEMICONDUCTORS, CHIPS & EQUIPMENT OFF -6.6%						
ADPT	63.56	15.37	Adaptec Inc.	23.81	-0.94	-3.8
AMD	48.50	8.18	Advanced Micro Devices	27.44	-4.69	-14.6
ALTR	67.12	20.43	Altera	52.81	-2.69	-4.8
ADI	103.00	23.31	Analog Devices	90.63	-1.88	-2.0
AMAT	115.00	35.62	Applied Materials	73.13	-3.81	-5.0
ASML	50.25	20.46	ASM Lithography Holding	35.00	-2.50	-6.7
FCS	49.50	19.50	Fairchild Semiconductor Corp.	33.63	-4.13	-10.9
HRS	39.37	15.50	Harris Corp.	28.69	-0.44	-1.5
INTC	75.81	32.50	Intel Corp.	57.69	-8.44	-12.8
JOSU	153.42	26.31	JDS Uniphase	104.50	-13.25	-11.3
KLAC	97.75	31.43	Kla Instruments	49.94	-6.81	-12.0
LLTC	74.75	27.62	Linear Technology	63.94	-5.81	-8.3
LSI	90.37	21.56	LSI Logic	33.63	-2.25	-6.3
MXIM	90.12	30.93	Maxim Integrated Products	78.00	-6.19	-7.3
MU	97.50	29.12	Micron Technology	58.75	-11.31	-16.1
MOT	61.54	27.33	Motorola	35.06	0.81	2.4
NSM	85.93	23.50	National Semiconductor	44.44	-1.00	-2.2
STM	73.87	21.27	SGS-Thomson Microelectronics	54.75	-2.25	-3.9
SLR	49.81	28.25	Solectron Corp.	47.63	-0.38	-0.8
TER	115.43	26.93	Teradyne	49.50	-7.88	-13.7
TXN	99.78	37.87	Texas Instruments	59.06	0.25	0.4
VTSS	115.68	33.84	Vitesse Semiconductor Corp	83.38	-3.38	-3.9
XLNX	98.31	30.50	Xilinx	81.69	-4.75	-5.5
COMPUTER SYSTEMS OFF -5.1%						
AAPL	75.18	28.71	Apple Computer Inc.	56.31	-3.50	-5.9
ASPX	19.00	3.87	Auspex Systems	8.06	0.00	0.0
BEOS	39.56	3.28	Be Inc.	4.91	-0.47	-8.7
CPQ	34.87	18.25	Compaq	30.50	-1.94	-6.0
DELL	59.68	35.00	Dell Computer Corp.	36.13	-3.00	-7.7
GTW	84.00	41.62	Gateway 2000 Inc.	59.47	-2.93	-4.7
HWP	155.50	67.00	Hewlett-Packard Co.	104.50	-18.31	-14.9
HIT	164.50	95.00	Hitachi Ltd.	120.94	6.69	5.9
IBM	137.68	89.00	IBM	125.63	-6.38	-4.8
MUEI	20.68	8.18	Micron	12.06	-0.81	-6.3
MOT	61.54	27.33	Motorola	35.06	0.81	2.4
NATI	59.50	25.50	National Instruments Corp.	45.75	1.00	2.2
NCR	47.00	26.68	NCR	37.50	-1.75	-4.5
NIPNY	162.00	79.37	NEC	131.50	-3.50	-2.6
PRCM	89.75	6.62	Procom Tech Inc.	34.63	-14.00	-28.8
SGI	13.50	3.06	Silicon Graphics Inc.	4.06	-0.44	-9.7
SNE	157.37	63.96	Sony	106.38	-3.75	-3.4
SUNW	129.31	38.93	Sun Microsystems	114.25	-8.31	-6.8
TRCD	23.37	2.93	Tricord Systems	15.38	1.50	10.8
UIS	49.68	9.12	Unisys	13.38	-1.13	-7.8
INTERNET OFF -1.0%						
AMZN	113.00	27.87	Amazon.com	43.56	-0.44	-1.0
AOL	95.81	40.25	America Online	55.06	-0.69	-1.2
ATHM	59.75	12.87	@home Corp.	16.69	0.19	1.1
CKFR	125.62	28.50	Checkfree	47.81	-4.31	-8.3
CYCH	16.00	3.62	Cybercash Inc.	4.53	-0.44	-8.8
EBAY	127.50	43.50	eBay Inc.	67.19	0.44	0.7
ETYS	86.00	3.87	eToys Inc.	5.97	0.28	4.9
EGRP	40.00	13.12	ETrade Group Inc.	19.13	0.81	4.4
LCOS	93.62	34.12	Lycos Inc.	71.44	1.69	2.4
OMKT	65.50	6.00	Open Market Inc.	7.94	-0.69	-8.0
OTEX	60.62	9.50	Open Text Corp.	25.50	1.63	6.8
PCLN	104.25	22.62	Priceline.com Inc.	26.25	0.00	0.0
PRGY	35.43	6.37	Prodigy Communications	8.13	0.47	6.1
PSIX	60.93	12.06	PSINet Inc. (L)	12.06	-3.44	-22.2
RSAS	93.06	23.56	Security Dynamics	51.38	-1.31	-2.5
WINK	75.00	11.62	Wink Communications Inc.	15.00	1.00	7.1
YHOO	250.06	69.68	Yahoo Inc.	105.25	1.38	1.3
STORAGE & PERIPHERALS UP 0.5%						
ADPT	63.56	15.37	Adaptec Inc.	23.81	-0.94	-3.8
APCC	48.84	16.00	American Power Conversion	21.88	-1.13	-4.9
CANNY	51.75	25.75	Canon Inc.	43.31	-0.69	-1.6
DBD	32.87	19.68	Diebold Inc.	27.75	-0.94	-3.3
EK	78.28	53.18	Eastman Kodak Co.	63.00	0.25	0.4
EMC	99.75	29.75	EMC	95.13	-1.69	-1.7
IOM	6.37	2.87	Iomega	4.94	0.56	12.9
MXTR	14.81	4.81	Maxtor Corp.	8.03	0.00	0.0
NTAP	124.00	15.64	Network Applinace Inc.	116.94	2.69	2.4
LXK	135.87	43.15	Lexmark International Group Nc.	57.75	-2.50	-4.1
SEG	75.43	26.56	Seagate Technology	58.50	-0.38	-0.6
STK	23.93	10.00	Storage Technology	14.63	-0.88	-5.6
TEK	87.31	28.37	Tektronix	73.19	0.19	0.3
XRX	50.06	14.56	Xerox	18.00	2.50	16.1

KEY: **(H)** = New annual high reached in period
(L) = New annual low reached in period

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Subscription rates: U.S., $58/year; Canada, $110/year; Central and South America, $250/year; all others, $295/year

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Expedia

Microsoft Corp. has promised not to provide any personal information to third parties unless the customer has specifically given Expedia permission to do so. Beyond that, as of today, customers have access to their profiles and the ability to update, correct or remove any items at any time.

"As a business, we need that personal information to process requests," said Suzi LeVine, Expedia's marketing manager. "Yet we want [customers] to feel confident in giving us that information, and we want them to understand exactly how we will use that information."

LeVine said possible online privacy legislation by the federal government spurred the company into adopting the new policy.

Expedia hired PricewaterhouseCoopers to audit its handling of personal information prior to today's switchover and promised regular reviews by the New York-based auditing firm to guarantee that the Web site is processing information in a proper fashion.

The online travel agency hopes that scrupulous handling of personal information will pay off the way improvements in credit-card security did three years ago.

"Hopefully, it'll be that underlying sense of confidence that allows [consumers] to make that transaction," LeVine said.

Policies Still Vary

Not all Internet companies are enacting such policies. Amazon.com Inc. in Seattle, for example, recently took the opposite stance, telling customers it could no longer guarantee that it wouldn't share its customers' information. In response, some partners are severing ties to the retailer (see story at right).

But Expedia joins online search-engine provider AltaVista Co. in Palo Alto, Calif., as a leader in the privacy arena, said Ari Schwartz, a policy analyst at the Center for Democracy and Technology in Washington.

"This is a major company taking this step," Schwartz said. "It says the market for privacy is coming together."

Schwartz's group is hoping that self-regulation in the business community will complement federal privacy guidelines and new technologies that give consumers more control over their personal information.

Some Finding a Niche

Russ Sapienza, a partner in the communications, entertainment and media practice at PricewaterhouseCoopers, said that in the past four years, his firm has been able to build an entire practice around privacy issues. He warned those companies looking to build such policies that it takes more than just composing an impressive policy statement.

Sapienza's group checks how data files are controlled, how well software is installed and whether customer service employees adhere to the policy. He stressed that an effective policy needs to trickle down intact from the executive suite to a company's phone banks.

"We've encountered some companies where they don't have a policy because they don't want to be subject to critique if they don't live up to that policy," Sapienza said.

According to Heidi Kim, an analyst at Jupiter Communications Inc. in New York, Expedia's policy sets a new bar for the online travel market. The firm is taking laudable steps toward minimizing the amount of personal information it needs to process its transactions, she said.

Kim called the move "a very good strategy, from a business standpoint," noting that online travel providers constantly compete on price but that few have made headway in addressing privacy as a customer service issue.

Research conducted by Jupiter shows that 58% of online consumers want a promise that their information won't be shared with third parties, making it the second-most-common concern behind credit-card security, Kim said. ◗

AT A GLANCE

Expedia Takes Privacy Oath

Expedia today is debuting a privacy policy that will cover all past and future customers of the travel Web site. Key elements of the policy include the following:

- A promise not to sell or rent any personal information to a third party without the customer's permission.
- The ability of customers to access and revise the personal information they've provided to Expedia.
- A guarantee that promotional e-mails will not be sent unless the customer requests such mailings.
- An assurance that third parties that advertise on the Expedia site can't gain customer names or address information through a permanent cookie assigned to each user.

Continued from page 1

CPOs

consumer interest. For Mutual of Omaha, it's a bottom-line issue. Privacy "is something that is going to help build a trusting relationship with our customers that we hope will allow us to retain their business and acquire new business," said Hoffman.

There are no more than 50 to 75 chief privacy officers (CPO) working at firms today, said Alan Westin, publisher of the Hackensack, N.J.-based journal *Privacy & American Business*, who spoke at the Global Privacy Summit here last week.

But the number of privacy officers is going to increase, perhaps into the thousands, as companies find "that their ability to manage privacy is a major part of their competitive edge," said Westin.

CPOs work with a variety of business units, including information systems, legal, governmental affairs and training departments. But the most important thing they need is buy-in from top management, said Tatiana Gau, vice president of integrity assurance at America Online Inc. in Dulles, Va.

"There is no question in my mind that one of the most important role of the CPO is to ensure that the whole company is adhering to a privacy commitment," Gau said.

Hoffman's post at Mutual of Omaha was created in April. He's currently working with information technology managers to document all of the company's data flows in order to learn exactly what happens to that data and who has access to it.

"We really didn't have a good handle on information flows through the company," said Hoffman, noting that the current project should lead to better risk-and-security assessments and help the company develop its privacy policies.

Some privacy advocates have argued that corporations will have an easier job of managing privacy if the government sets baseline regulatory standards. And although there are targeted medical and financial regulations, there isn't any broad-based privacy legislation for e-commerce.

But Jules Polonetsky, CPO at network advertiser DoubleClick Inc. in New York, said he hopes lawmakers give self-regulation more time. "Let's give the majority of honest businesses an opportunity to see if that works," he said. ◗

AT A GLANCE

Emergence Of the CPO

Chief privacy officers are increasing in number and prominence at corporations.

What do CPOs need? Top management support and the ability to interact with a variety of business units, including information systems.

What do they want? To fix a company's privacy weaknesses.

What do they fear? Litigation resulting from abuses or mistakes in information handling.

What's their goal? Customer satisfaction.

Amazon Loses 2 Partners Over Privacy Policy

Two privacy advocacy organizations, the Electronic Privacy Information Center (EPIC) in Washington and Junkbusters Corp. in Green Brook, N.J., have severed all ties to Amazon.com Inc. over recent changes made to the online retailer's privacy policy.

On Sept. 1, Seattle-based Amazon announced that it would no longer guarantee that it wouldn't share customer information with third parties.

Last week, the privacy groups told Amazon that they could no longer participate in Amazon's affiliate program.

Amazon affiliates put a link on their Web sites directing customers to Amazon's Web site. They receive a referral fee each time they direct business to the online retailer.

A spokeswoman for EPIC said the organization would continue to sell its privacy-related books and other materials through its own Web site and look for other ways to market the information.

Amazon spokesman Bill Curry said he respects the groups' decisions, adding that EPIC and Junkbusters were just two of Amazon's 500,000 affiliates.

Curry defended Amazon's new privacy policy, saying the retailer had tightened up the terms of its previous policy.

Barrett Ladd, an analyst at Gomez Advisors Inc. in Lincoln, Mass., said that although consumer privacy is an important issue in the online retail world, Amazon is in a difficult position because of its extensive "commerce network."

"Amazon has so many [partners] – other online companies that they invest in like Drugstore.com and Greenlight.com – that they almost have to have that [new] policy because they don't want to get hurt if those affiliates use their customer data," he said.

Jonathan Gaw, an analyst at International Data Corp., said the privacy groups felt Amazon.com had too much latitude in what it could do with its customer data.

– Linda Rosencrance

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FRANK HAYES/FRANKLY SPEAKING

No right answers

LAST MONTH, IT WAS KAISER PERMANENTE. This month, WesternUnion.com had to scramble after an IT shop mistake left thousands of customer names, addresses and credit-card numbers open to a cracker's attack (see story, page 16). More than 15,000 names had been stolen, but Western Union's people didn't know that when the break-in was discovered early the morning of Friday, Sept. 8. All they knew was that their site had been cracked.

So at 9 a.m. that day, the company assembled a "virtual war room" — a phone conference that included Western Union's president, the top legal beagles for both Western Union and its parent company, First Data Corp., and IT people from both organizations.

They all banged heads for a while and then decided to start contacting customers. (You have the clout to make that kind of decision when the business unit's president and lawyers are involved.) That started on Saturday: By phone, e-mail and letter, customers who had used the Web site to wire money were notified that their information might have been compromised, and they were told to contact their financial institutions.

By Saturday afternoon, Western Union had a toll-free number for customers to call with questions. By midday Sunday, IT staffers knew the extent of the breach — exactly which 15,700 customers' information had been stolen — and sent that information to the credit-card companies.

Which promptly told Western Union to *stop* contacting the customers — they wanted to do it themselves.

That sounds like a slap in the face to Western Union's best efforts to protect its customers, doesn't it? But it's not. And it underscores a paradox in recovering from this kind of Web catastrophe:

IT has to take responsibility — and the lead — in fixing the problem. But sometimes, other parties are better positioned, better equipped and actually *want* to do the work. And when that's the case, the best plan is to just get out of their way and let them work.

Once they have the stolen numbers in hand, Visa, MasterCard and the other credit-card companies are able to do more than simply contact the affected customers. They can use sophisticated techniques to spot likely fraudulent card uses. Credit-card company staffers are also exactly the right people to advise cardholders and cancel cards when necessary.

That's the business they're in. And since they wanted to take on that part of the clean-up job, letting them do it was exactly the right move for Western Union.

On the other hand, *until* the credit-card companies were ready to take that on, Western Union was exactly right to notify customers on its own.

> *IT has to take responsibility — and the lead — to fix the problem.*

Messy, isn't it? And there's no right answer, no industry-standard best practice for straightening out this kind of foul-up. Plans, even good plans, may have to change fast. Business partners may force changes, or lawyers, or corporate policy makers, or even customers — all people IT has no control over.

In IT, we like solid plans, clear lines of responsibility and predictable results. But in a disaster like this, we're not going to get them. We'll more likely be whipsawed all over the map, even if we have the full support of the top brass, as Western Union's IT people did.

But elegance doesn't count when you're rushing to protect customers, satisfy business partners and repair damage. Results do. By Wednesday afternoon, WesternUnion.com's Web site was back up. The security holes were closed.

And out of all the numbers stolen from the Western Union site, not a single fraudulent credit-card transaction had been reported. ◗

Hayes, Computerworld's senior news columnist, has covered IT for more than 20 years. Contact him at frank_hayes@computerworld.com.

SHARK TANK

BIG OUTSOURCER handles the installation of an uninterruptible power supply for a local government agency's servers. When the batteries get too low on the new UPS, a signal will go to the servers to shut them down. Just one problem, notes the network admin pilot fish who inspects the work: "They didn't hook up the cables, so the servers will never receive the signal to shut down!"

PRICEY CONTRACT programmer calls on-staff pilot fish to complain that a program "just quit working," and after four hours of debugging, he still can't figure out why. "Did you make any changes to the program?" asks the fish. Pricey programmer replies, "Yes, but only to one line of code!"

EDICT COMES DOWN from the owner of a wholesale distributor to put a photo of every employee on a "People" page of the company Web site. Webmaster pilot fish snaps the pix, scrupulously informing each staffer that the photo is for the Web. The page goes live, and one truck driver storms in: "Is my picture on the Internet? That's an invasion of my privacy and you have to take it off *right now!*" OK, OK, says the fish, but I told you it was for our Web site, right? "Yeah," he says, "but I didn't know it was going to be on the Internet!"

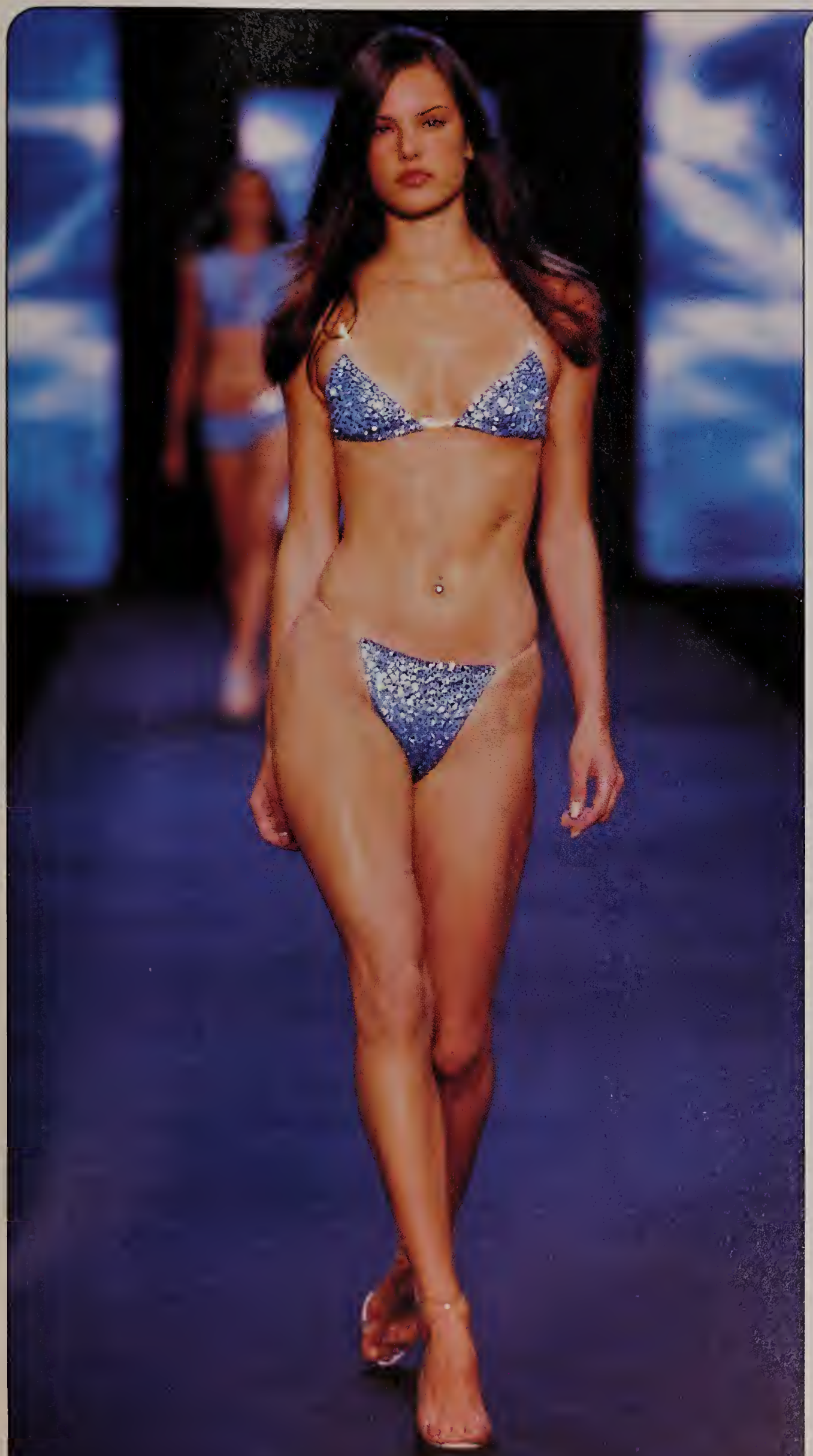
IT STAFF CAREFULLY completes all the boss's changes to a 35-page outsourcing agreement. A pilot fish prints out a hard copy for signatures and e-mails a copy to the boss – who then spends a full day with the fish's entire team, carefully comparing the fish's printouts with what came from his own printer, "just in case it somehow produced a different document."

Last week's item about the company fishing for a Latin American marketing guru in Brazil netted lots of mail informing Sharky that "in Brazil they don't speak Spanish, they speak Portuguese." Actually, there *are* plenty of Spanish-speakers in Brazil – and plenty of people down south who don't speak Spanish. As one in-the-know reader put it, "We pretty much require at least two languages for our folks anywhere in South America." Lay some language on me: **sharky@computerworld.com**. You get a sharp Shark T-shirt if your story sees print – or turns up in the daily feed on the Web at *computerworld.com/sharky*.

The 5th Wave

E-mail richtennant@the5thwave.com

"Hey Philip! I think we're in. I'm gonna try linking directly to the screen, but gimme a disguise in case it works. I don't want all of New York to know Jerry DeMarco of 14 Queensberry, Bronx NY, hacked into the Times Square video screen."



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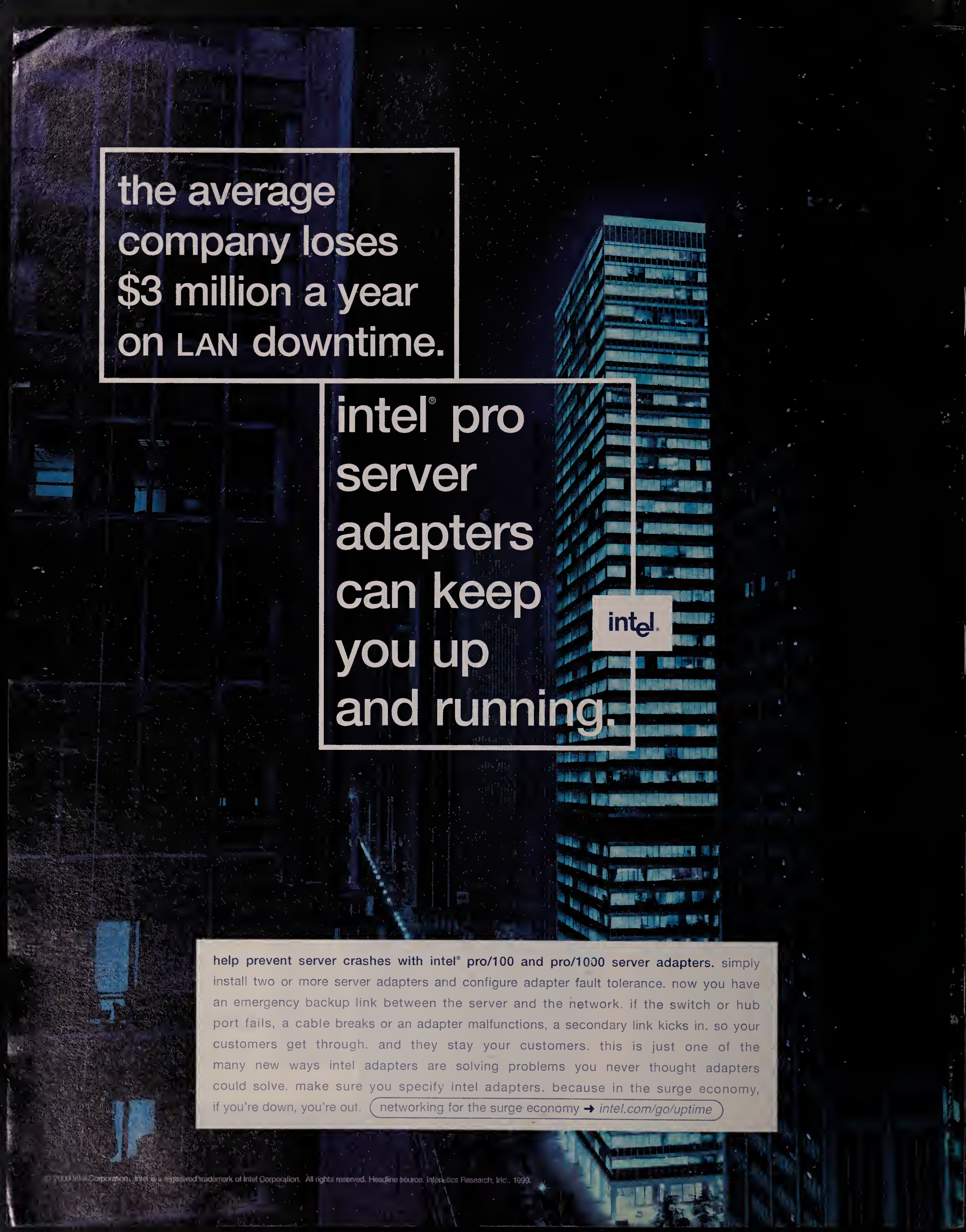
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